COTTON

SEPTEMBER, SERVING THE 1938

Textile Industries

A PROBLEM TO BE SOLVED

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In many instances throughout the South the new Federal Fair Labor Standards Act of 1938 has created a definite problem for Management, pertaining to wages and hours.

To solve this problem quickly and effectively . . . and at the same time, maintain the necessary profit on manufacturing operations . . . calls for a vast experience along these very lines . . . an experience which very few have had.

Since 1925 The George S. May Company has handled over 2,200 jobs of Management Engineering. Of this number 1,800 have directly involved wages and hours.

No other organization can boast of a comparable record and for this reason, the George S. May organization is the logical choice to handle your problem under the Wages and Hours Bill. For complete information address the nearest office listed below.

ENGINEERS

GEORGE S. MAY COMPANY

CHICAGO	SEATTLE	ATLANTA	NEW YORK
2600 North Shore Ave.	710 Second Avenue	134 Peachtree St.	122 East 42nd St.

CANADA: George S. May, Ltd., 320 Bay St., Toronto

OFFICES IN 15 OTHER PRINCIPAL CITIES

SIMPLE ARITHMETIC THAT WILL SAVE YOU MONEY

4x1=4

4 times 1 equals 4 of course, but how can this fact save you money and what has it to do with yarn dyeing or colored yarns?

Assume that you have placed a yarn dyeing order with our Providence plant, which has personnel and equipment second to none in the dyeing industry. Even so, you are not depending on Providence alone for prompt and efficient execution of your contract. For Providence can and does profit at will from the experience of its sister plants in Philadelphia, Greenville and Chattanooga and vice versa. In short when you order Franklin Process Colors or Franklin Process Yarn, you not only utilize the experience of one plant, but 4 times 1 or MULTIPLIED EXPERIENCE, which in some years totals 17,000,000 lbs. of yarn dyeing.

Add to this experience the superior penetration and levelness that are characteristic of Franklin Process Package Dyeing and the economy of the Franklin Package as a supply for warping or winding, and the answer is money in your pocket.

Franklin Process

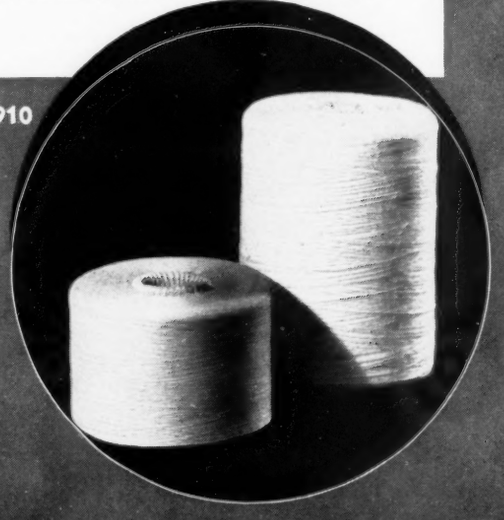
Natural Yarns Colored Yarns Glazed Yarns
Dyeing and Processing Machines

PROVIDENCE • PHILADELPHIA • GREENVILLE
CHATTANOOGA

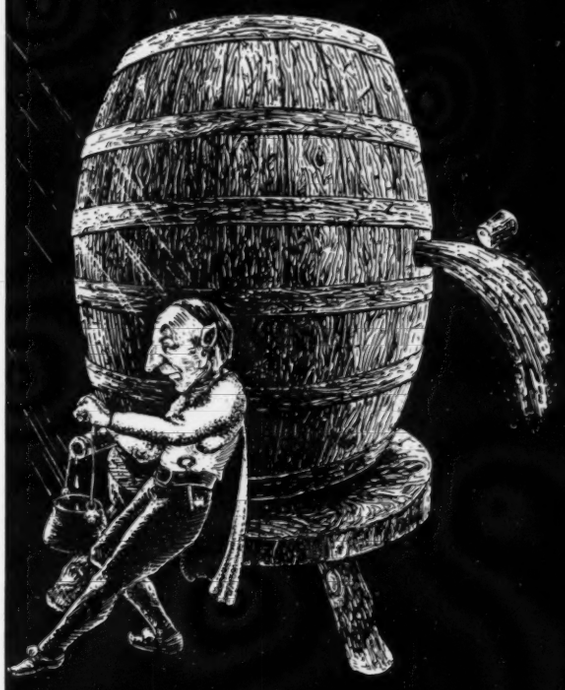
NEW YORK REPRESENTATIVE, 40 Worth Street
CHICAGO REPRESENTATIVE, 100 W. Monroe Street

SPECIALISTS IN PACKAGE DYEING SINCE 1910

THE FRANKLIN PACKAGE - - Its firm wind and square corners make it an excellent supply (overend or rotating) for various rewinding operations.



COTTON is published monthly by W. R. C. Smith Publishing Co., Dalton and Atlanta, Ga.
Subscription Rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign Countries, $2.00 per year.
Entered as second-class matter at the Post Office, Dalton, Ga., under the Act of Congress of March 3, 1879.



Are You Watching
Small Expenses So Intently
At the Spigot
You Fail to Notice that
the Bunghole of Waste
Has Blown
Wide Open?

That is What You Do

When You Buy Something because it is Cheap that will Cause Trouble in Your Mill

When You Buy Loom Repair Parts that Do Not Fit

When You Buy Bobbins that Cause Slough-offs and Make Seconds

When You Use Bobbins that Cause Filling Breaks

When You Buy Shuttles that Do Not Thread-up Properly

When You Use Shuttles that Do Not Properly Position the Bobbin

DRAPER CORPORATION

Atlanta Georgia Hopedale Massachusetts Spartanburg S C

BALL *and* ROLLER BEARINGS

Keep 'em Anti-friction!
Spinning and twister frames with anti-friction bearings for cylinders, save power, application time, wear, make for more uniform spindle speeds.

Close-up of anti-friction bearing installed on a spinning frame cylinder. This bearing can be kept in perfect order for years by using Texaco Starfak.

THE INSTALLATION of ball and roller bearings makes outstanding improvement in textile machines, but to *maintain* this improvement, these bearings must be properly lubricated.

Thousands of ball and roller bearings in textile machines are kept in prime condition with Texaco Starfak Grease.

Texaco Starfak was worked out by Texaco, cooperating with prominent bearing makers.

Texaco Starfak stays stable over long service periods, resisting oxidation, gum formation, and oil separation.

To reduce the possibility of undue wear and costly shutdowns in *your* mill, get in touch with Texaco.

Trained lubrication engineers will aid you to select and apply Texaco Starfak.

2108 Texaco warehouse plants throughout the United States assure you of prompt delivery. Wire, phone or write:

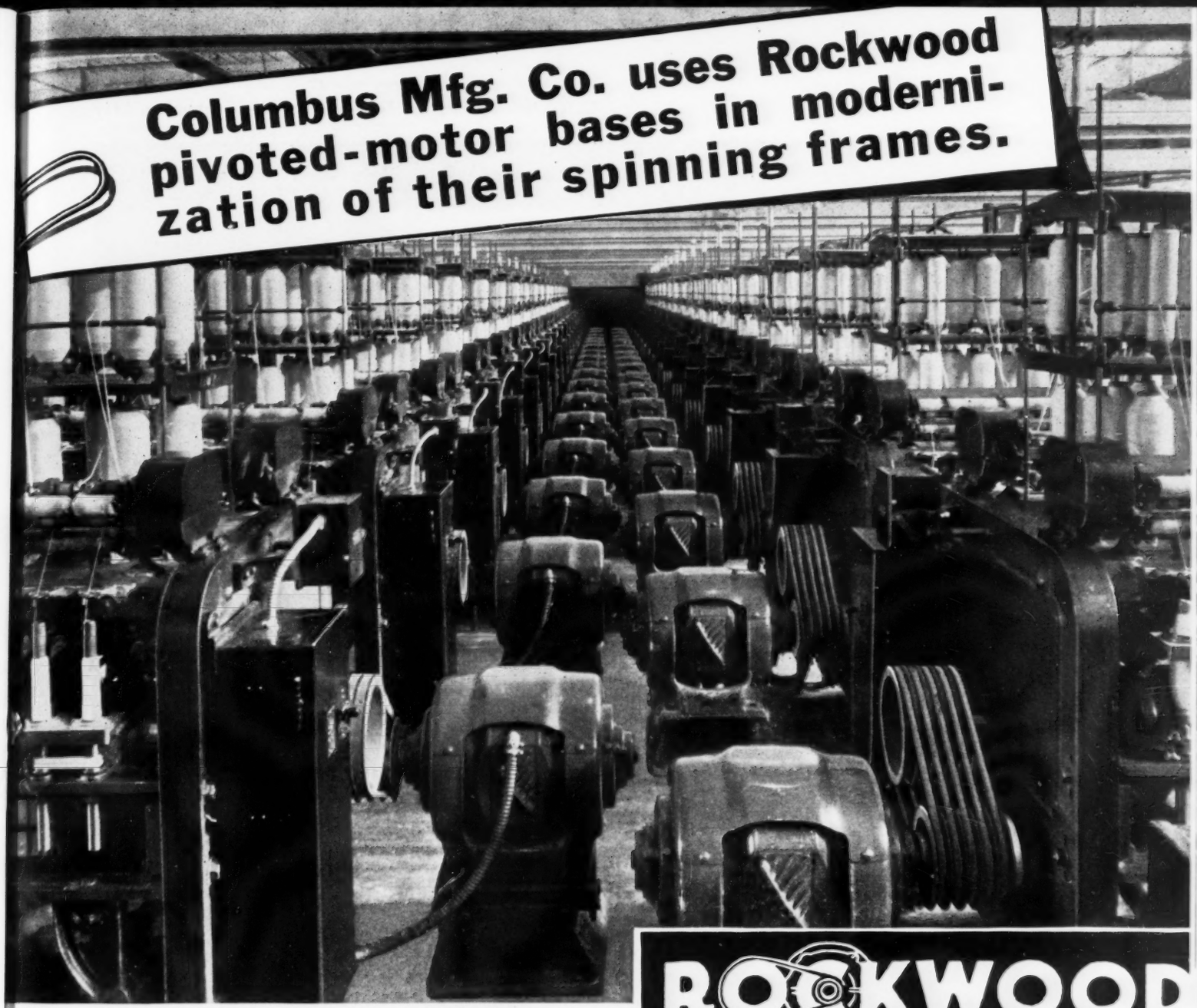
The Texas Company, 135 East 42nd Street, N. Y. C.

TEXACO

TEXACO *Starfak* GREASES

FOR HIGH-SPEED BALL AND ROLLER BEARINGS

Columbus Mfg. Co. uses Rockwood pivoted-motor bases in modernization of their spinning frames.



This very interesting picture shows the new spinning frames, shielded type motors, Texrope variable speed V-belt drives and Rockwood Drive Pivoted Motor Bases - pedestal floor type - for spinning frame drives at Columbus Mfg. Co., Columbus, Georgia.

ROCKWOOD PIVOTED MOTOR DRIVE

Another great cotton manufacturer comes to Rockwood for more and better production - at less cost to run.

Because Rockwood Drive bases automatically keep the belts tight and therefore the speeds and production are uniform, they were considered necessary with this new spinning room installation. It is interesting to note that where uniform machine speeds are important, Rockwood pivoted-motor bases are needed just as much with V-belts as with flat belts. For both types of belts the Rockwood Drive base automatically takes up belt stretch and maintains proper running tensions by using part of the weight of the motor and part electric torque reaction to meet changing loads automatically.

In addition to better and more uniform spinning, belt life is increased and the drive efficiency is higher and is sustained throughout the life of the belts. Maintenance is reduced and power is saved. Rockwood pivoted-motor bases are necessary for maximum performance with belt driven cotton mill machinery. That is why they are included in nearly all of the modernizing jobs done by leading cotton mills and engineers.

Find out what Rockwood can do to improve *your* production and reduce your operating costs. Tell us your requirements and we will send you our suggestions - with recommendation engineered to fit your particular conditions.

OCKWOOD MANUFACTURING CO., INDIANAPOLIS, IND

"...Your Order Received...Sorry!"

Lost—a profitable order from a potential new customer—for lack of adequate capital to finance sales expansion.

It has happened!

Concerns that have been financially geared to a recession pace can and *do* lose business to better-financed competitors.

It *needn't* happen to you. You can be *better*-financed without increasing your capital investment—without incurring new loans.

We will gladly demonstrate how our open account financing service simplifies the "ready money" problem. We will prove, with cold hard figures, that it is a sound, economical way to make limited capital go farther and turn over faster.

★ *How would you raise quickly needed cash without borrowing? Send for a copy of "Capital at Work" . . . No obligation.*

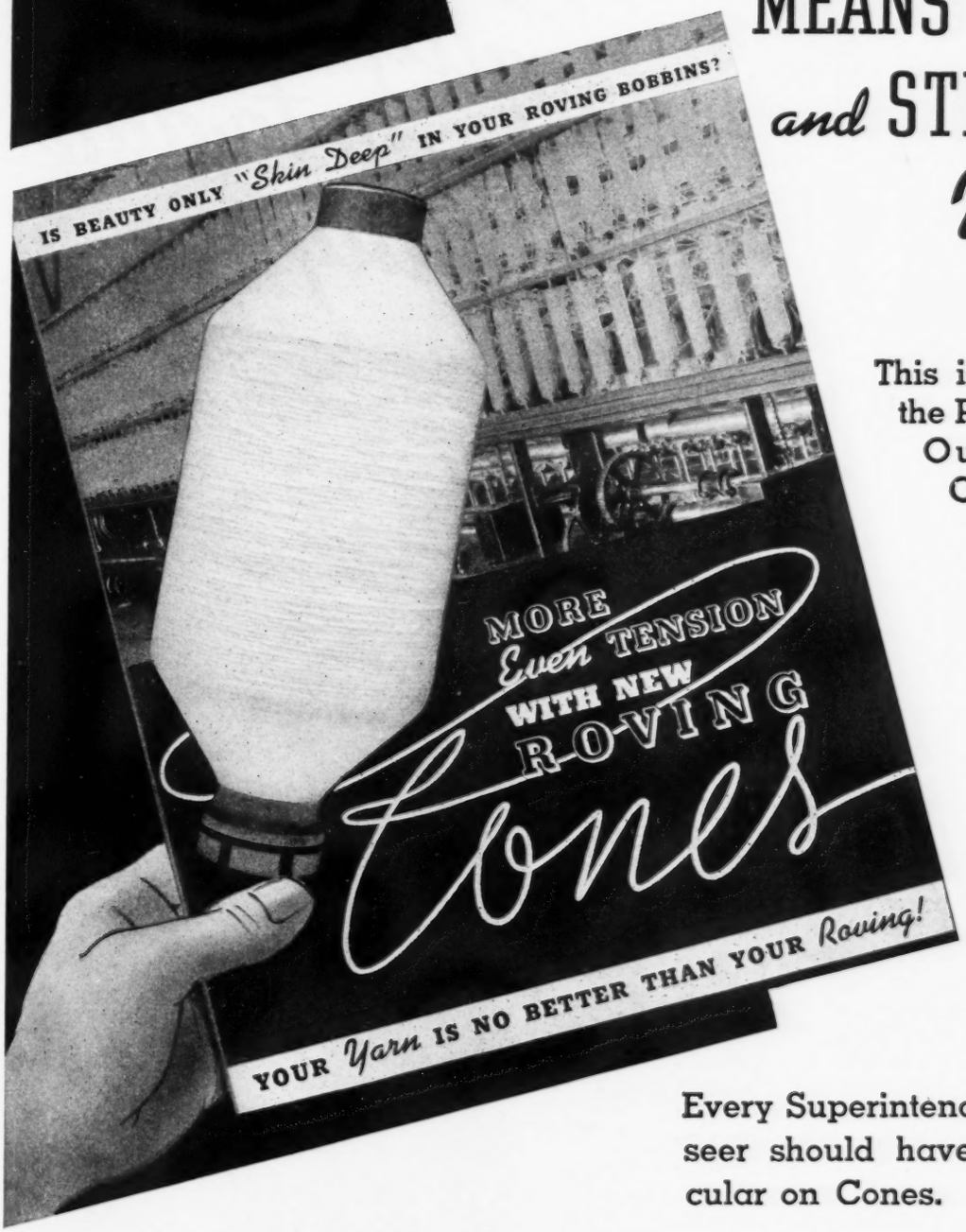
COMMERCIAL CREDIT COMPANY

Capital and Surplus Over $65,000,000

BALTIMORE

NEW YORK CHICAGO PORTLAND, ORE. SAN FRANCISCO

An EVEN, CONTROLLED TENSION *for Every Layer of Roving on the Bobbin* MEANS EVENER *and* STRONGER *Yarns.*



This is assured with the Patented Martin Outline Bottom Cone.

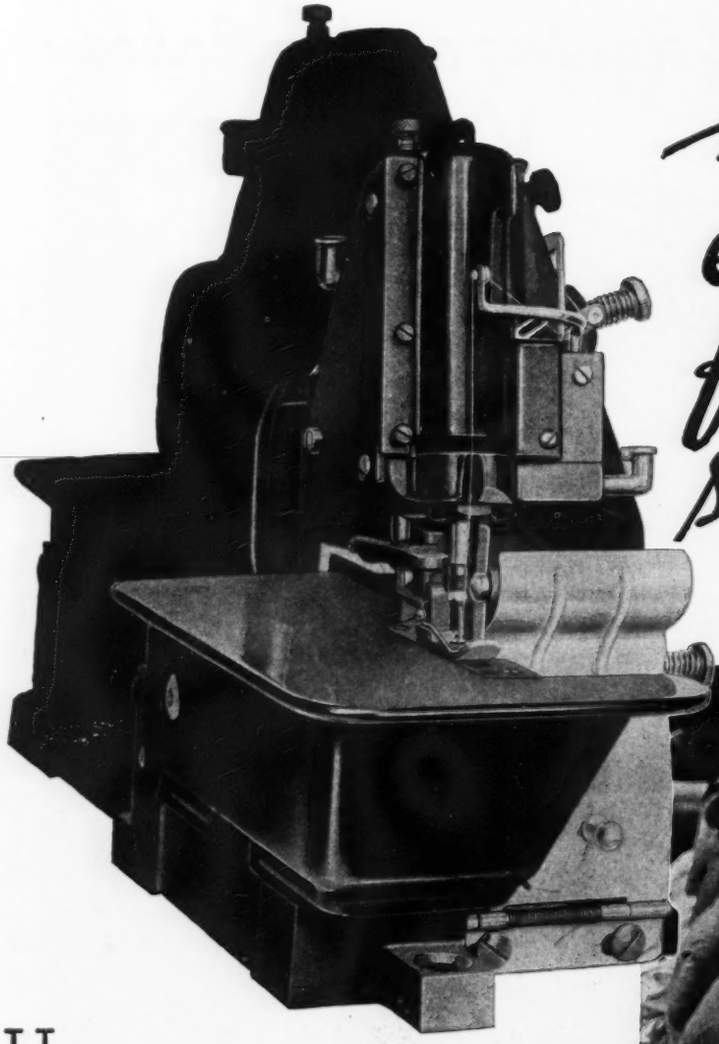
Every Superintendent and Overseer should have our new circular on Cones.

YOUR COPY WILL BE MAILED PROMPTLY UPON REQUEST.

WHITIN MACHINE WORKS
WHITINSVILLE, MASSACHUSETTS
CHARLOTTE, N. C. ATLANTA, GA.

The THIRTY-NINE-TWO OVEREDGER

—standard equipment for up-to-date sewing rooms



HIGH operating speed . . . fast starting and stopping . . . unexcelled quality of work produced . . . and minimum maintenance requirements give the Union Special Class 39200 Overedger just about everything that a manufacturer could wish for in a modern sewing machine. As a result, the "Thirty-Nine-Two" has been selected time after time as "standard equipment" for up-to-date sewing rooms in all parts of the world. Machines are offered in twenty-three individual styles making it possible to quickly select the exact style suitable for any particular job. We will be pleased to give you recommendations and samples of work produced — just tell us what operations you have to perform. UNION SPECIAL MACHINE CO., 438 N. Franklin St., Chicago, Ill.

UNION SPECIAL

Tee for Two

• Holiday golf—whether "stag" or in mixed company—is good for the nerves of the busy mill executive.

Another antidote for the jitters is a reliable line of mill supplies—and here we refer specifically to Stein-Hall starches, dextrines and gums. These dependable, uniform products bring production efficiency to your sizing, printing and finishing operations—they give you more peace of mind when you're on the job and when you're taking time off! And remember—back of every Stein-Hall product stands the guardian policy and scientific research of Stein-Hall laboratories, supplemented by the friendly and effective service of Stein-Hall field experts.

• • •

To executives who are not yet using Stein-Hall starches, dextrines and gums: drop us a line describing your needs so we can send you complete information.

STEIN, HALL & COMPANY, INC. 285 MADISON AVENUE, NEW YORK

STARCHES, DEXTRINES AND GUMS FOR

SIZING · PRINTING · FINISHING

WHY THE ROTOCURE PROCESS OF PRODUCES

THE BWH Rotocure Process of Continuous Vulcanization is the only practical method of producing uniform rubber belting entirely free from press overlaps. It solves the problem because the belting is processed on an exclusive patented rotary type of press, radical in principle. It substitutes uniformity for variation by making the vulcanizing process automatic instead of spasmodic. Uniformity results not from the skill or experience of the operator, but from the unvarying precision of the machine. The result: a uniform belt uniformly vulcanized and uniformly stretched, that will give uniform service.

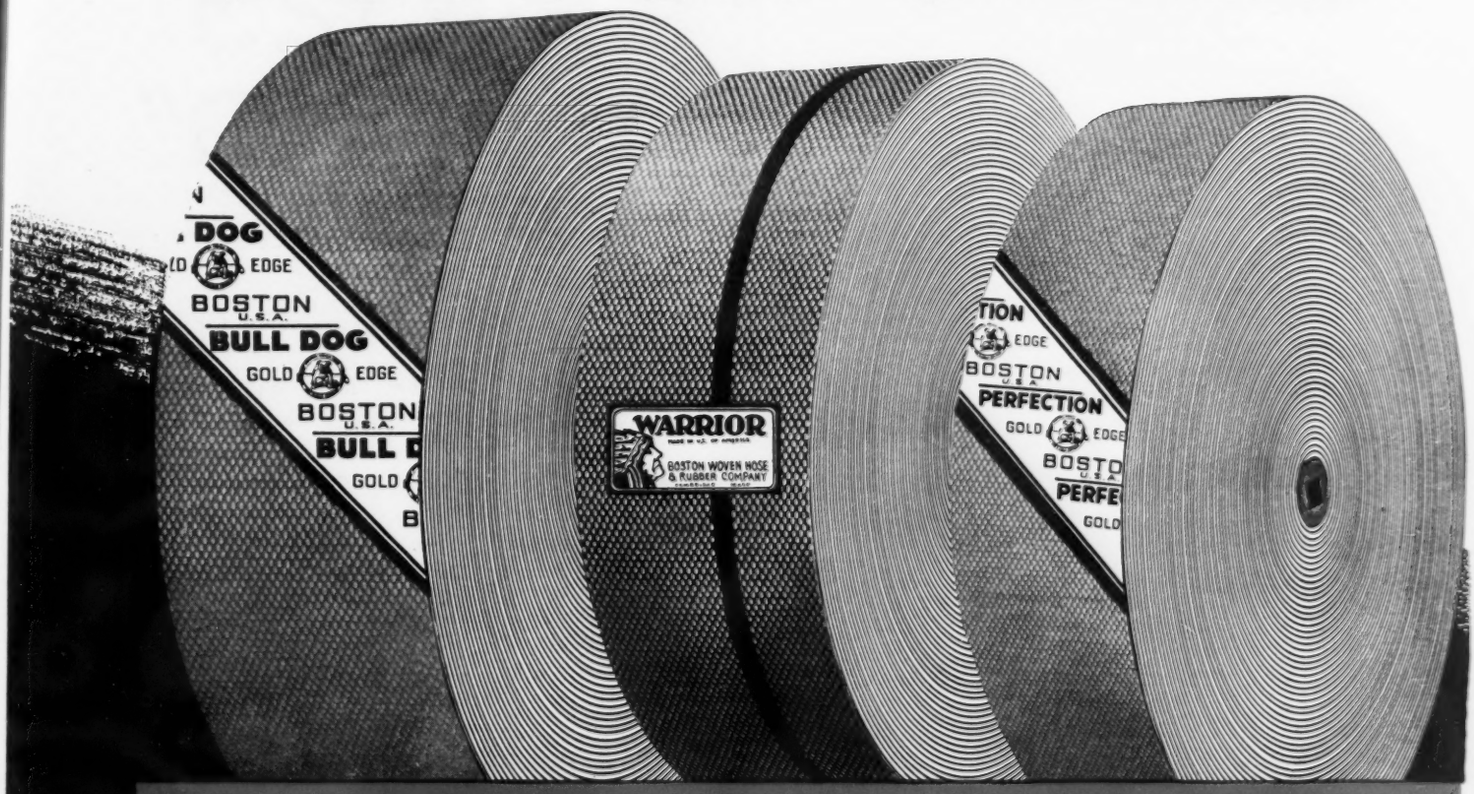
The advantages of continuously vulcanized belts and the economy which they represent in the operation of your plant cost you nothing. BWH belts, made by this process, are competitive in price. You pay no premium for this extra measure of quality and service. It is only necessary to order belting by name and specify the BWH brand which best suits your service requirements.

BOSTON WOVEN HOSE AND RUBBER COMPANY TRADE MARK

BOSTON WOVEN HOSE

CONTINUOUS VULCANIZATION

BETTER BELTS



BULL DOG

For the severest requirements of drive and endurance. Extreme and uniform flexibility to meet difficult driving conditions. The gold standard of belt value. No drive too hard. No service too severe.

WARRIOR

Built of special 32-oz. duck, folded construction, highly resistant to stress and strain, and with high quality friction between the plies. For hard general use where sturdy and consistent performance is required.

PERFECTION

Built on a proved principle — many plies of relatively light-weight duck instead of a few plies of heavy duck. Widely used in the lumber industry on woodworking machinery; also for motor fan and centrifugal pump drives.

The above belts are made in all standard widths and any number of plies to meet specified conditions. Made endless if desired.

& RUBBER COMPANY CAMBRIDGE MASS. U.S.A.

1 inch
Fig. 123
"N-M-D"

LUNKENHEIMER

Fig. 123 "N-M-D"

(NON-METALLIC DISC)

A serviceable bronze valve for steam; hot water; cold water, gas and air. The non-metallic disc (made in three basic types) is easily and quickly renewed.

Available in Globe, Angle, Check and Quick Operating Patterns.

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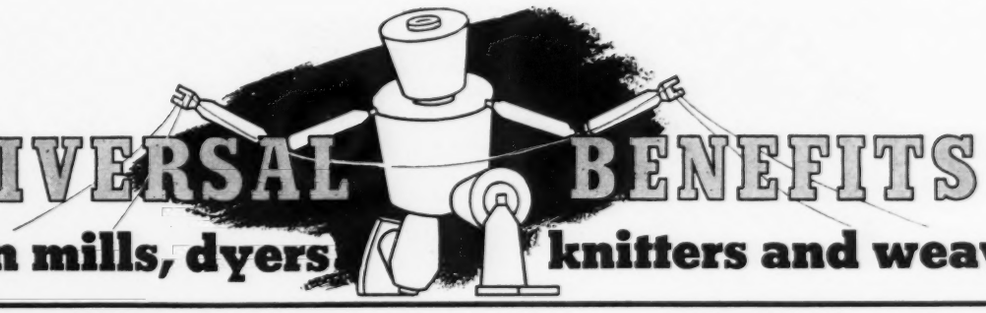
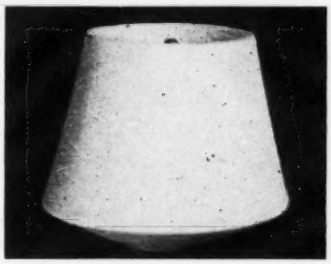


UNIVERSAL BENEFITS

for yarn mills, dyers, knitters and weavers



Knitting Cones Wound at Lower Cost

Knitting cones with standard open wind are produced at high speeds on the Roto-Coner. These high speeds are accomplished without the danger experienced with excess cam speeds, as on reciprocating-guide winders, and it is not necessary to sacrifice proper lay of yarn.

If, on a reciprocating-guide winder, the drum speed is increased to give higher winding speeds, it will automatically increase the cam speed beyond the safe maximum limit. Any change to reduce the cam speed will also change the lay of yarn, and the cone will not have the standard open wind required for knitting.

On the Roto-Coner, the patented rotating traverse — a one-piece combination driving drum and traverse guide — eliminates all cams and reciprocating parts. This makes possible higher production and lower operating costs, and in addition the Roto-Coner has the lowest cost for maintenance and repair.

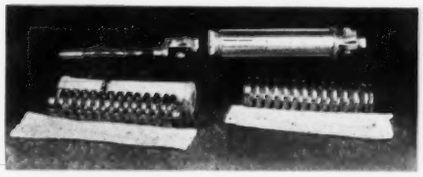
Quality is insured by the action of the rotating traverse in preventing roll-cut yarn . . . reducing strain on the yarn . . . and eliminating chafed yarn.

The experience of over 100 installations (including several mills completely equipped) shows that operators prefer these quieter, lint-free, easier-to-operate winders . . . and that knitting mill customers are universally satisfied with the packages.

Holders for Franklin Springs

The standard holder for winding Franklin spring packages is shown at the right. It is a quick-loading holder, which locks the ends of the stockingette in position and prevents ballooning due to centrifugal force as the package rotates at 350 to 400 y.p.m. A quarter-turn on the knob nips the ends of the stocking; another quarter-turn locks the holder, ready for winding.

Other mills, preferring a temporary arrangement, can use the regular spring spindle for 5/8 tubing and a special wooden holder (left). The investment cost is lower, but it requires more handling time in operation. The wooden plugs nip the ends of the stocking, holding it in position over the Franklin spring for the full traverse of the yarn.

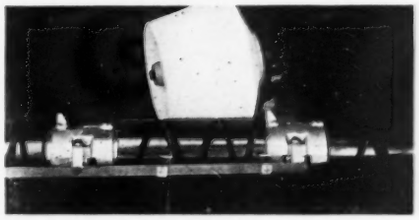


Short Traverse for Warping Cones

Mills warping fine counts of yarn are inclined to experience higher end breakage than is consistent with good production.

The cause of this end breakage, we have found, is the fact that the yarn, when delivering from the warping creel, drags over the surface and nose end of the cone. Fine counts of yarn do not balloon between the cone and the creel tension, even when warping at high speeds.

We have suggested to such mills that the use of the Short Traverse Mechanism on the Roto-Coner will be effective in reducing this end breakage. This attachment makes it possible to stop off the package length at any of the crossing points in the rotating traverse. By thus winding on the *base* end of the cone only, the distance the yarn will have to travel over the surface of the cone is decreased; and the space between the nose end of the cone and the creel tension is increased, thus reducing end breakage.



A mill using wood cones can wind short traverse packages on the same cones. When paper cones are used, a special paper cone which is short on the nose end, fits over the regular cone holder, being held in place by the regular prongs.

Mills spinning cut staple rayon yarns, are using the Roto-Coner equipped with paper cone holders for 3° 30′ cones, which fit the regular holder in the rayon creel. Either the full traverse or the short traverse is used, depending upon results when removing the yarn from the cone in the creel.

Short Traverse Cones *which may be wound on the Roto-Coner using the Short Traverse Attachment*

ROTATING TRAVERSE 3-INCH DIAMETER	FULL TRAVERSE	PACKAGE LENGTH IN INCHES BY STOPPING OFF: Left End of Package			
3 turns 5/8 accelerated-warping cones	6	4 3/4	3 3/8	2 9/16	1 5/8	1 1/16
2 1/2 turns full accelerated-knitting cones	5 3/4	4 1/4	2 7/8	1 3/4	. 3/4	

Knitters Who Wind Report Double Benefits

Knitters who buy their yarn would be interested in the experiences of some of our knitting mill customers who do their own winding. These customers have written to us, describing how changing over to Roto-Coners has not only reduced winding costs but has also resulted in improved production in the knitting room.

Quality of the yarn has been definitely improved. Higher winding speed throws out more trash . . . efficient double slub catchers remove imperfections . . . the rotation of the roll in the direction of the yarn travel eliminates chafing . . . and the absence of slip drums, metal driving rolls and reciprocating guides means no more roll-cut yarn.

UNIVERSAL WINDING COMPANY

P. O. BOX 1605 PROVIDENCE, R. I.

BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

We'll add 1 or 2% to that or you get your money back.

"Nobody's ever sold leather belting like this before, but here goes. We're so certain that the new Research Belting will increase average machine production at least 1 or 2% over ordinary belting that we'll give you your money back if it doesn't.

"But it will. It has, on all types of drives. $2.88 extra profit a year on each loom. 15 feet more an hour on spinning frames. 4% more production on woolen cards. 6 more picks a minute.

"Figure it out. With Research Belting on all your drives — even at only 1 or 2% increase — you'd make a pretty profit!"

YOU can figure it out on your machines, too. Sometimes it runs to thousands of dollars a year. And it's all because completely new manufacturing processes give Research Belting a higher transmission capacity that increases average machine production.

Take advantage of our "money-back" guarantee—you will find the nearest Graton & Knight sales office or distributor in our insert in the belting section of Thomas' Register. Why not call today to get Research Belting on one of your important drives where increased production can be measured.

MODERN GROUP DRIVE

Graton and Knight

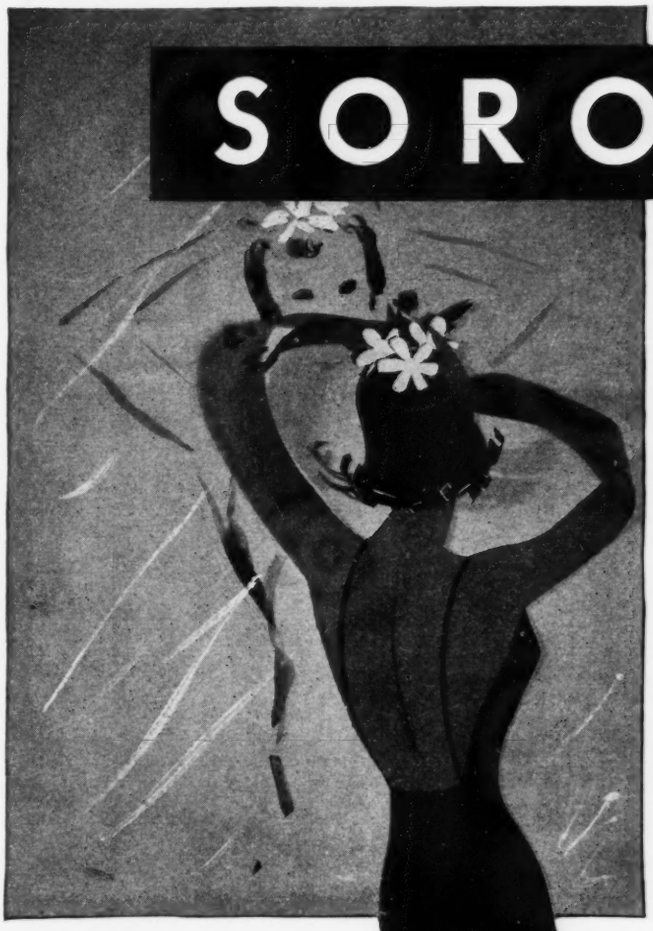
RESEARCH BELTING

from the Home of Research, Worcester, Mass.

WRITE FOR OUR HANDBOOK ON LEATHER BELTING AND POWER TRANSMISSION

6802

SOROMINES



are the ideal softeners for giving rayon fabrics the smooth, subtle drape that appeals to discriminating customers.

GDC

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435 HUDSON STREET, NEW YORK, N. Y.

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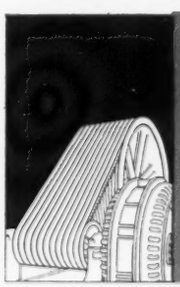
STALWART

Resolute . . . adamant . . . stalwart . . . Dayton Cog-Belts have rugged stamina that's built through and through by patented, laminated construction. In Daytons—the fabric, cords and rubber compound are welded into a stalwart body that is tough and unyielding. With die-cut raw edges they have the grip and guts to take gruelling punishment and deliver smooth, constant driving power under all conditions. Daytons' extraordinary crosswise rigidity holds them straight and true in the pulley grooves as positive wedging action gives them ruthless pulling power. No clanking and chattering! No jerks! No jolts! No slipping! No writhing! No whipping or screeching! Instead, dependable Daytons deliver shockproofed power with less strain and stress on bearings—and above all, power that is efficient and economical. For complete data call your local Dayton Distributor or write us for catalogs.

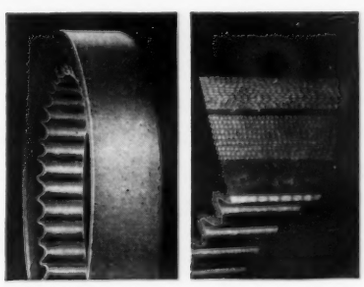
THE DAYTON RUBBER MFG. CO. ★ DAYTON, O.



Dayton

COG-BELT DRIVES

MADE BY THE WORLD'S LARGEST MANUFACTURER OF V-BELTS



Error-Proof Control
MEANS ECONOMY IN DYEING
Chart selected at random from actual operating records of a large hosiery mill. Note how quickly the dyeing temperature was raised to 210°F.—how uniformly it was maintained—with FOXBORO Automatic Dye Machine Control.

Dye Room 100% Equipped with FOXBORO Dye Machine Controllers.

You can secure *exact* desired shades of color . . . and match them time after time without failure . . . with FOXBORO Automatic Dye Machine Control. Moreover, it saves on steam and eliminates fogged-up dye houses. It saves on degumming oils and soaps, with actual reductions of 10% to 20%. It reduces both the amount and frequency of dye and salt additions; cuts re-dyes; and, by eliminating hand manipulation, frees operators for other duties.

With the Elapsed Time Device, the Dye Machine Controller raises the temperature to the exact degree required . . . holds it for a predetermined period . . . then shuts off steam and simultaneously turns on a signal light. Such action makes dye control 100% automatic—with complete, permanent records for checking past runs and duplicating previous schedules.

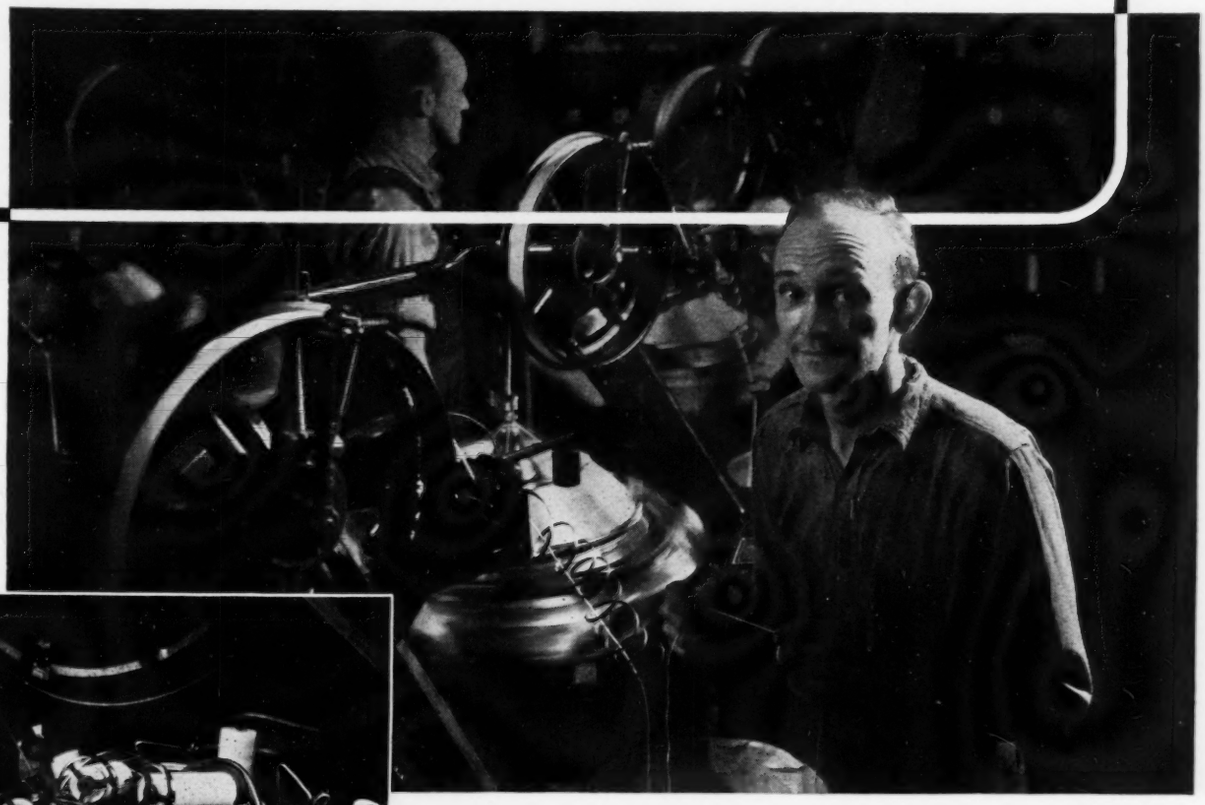
Why not put FOXBORO's broad experience in the textile field to work for you? Write for full information on Dye Machine Control—and you'll probably be interested, too, in FOXBORO Precision Control for Hosiery Boarding. The Foxboro Company, 18 Neponset Ave., Foxboro, Mass., U. S. A. Atlanta office, 101 Marietta Street Building. Branch Offices in 25 Principal Cities.

FOXBORO

REG. U. S. PAT. OFF.

DYE MACHINE CONTROLLERS

"I asked my boss for a BETTER OIL...



The large head rotors of this modern braiding equipment operate at a speed of 488 R.P.M., with the spools on the head rotating much faster. Gulf Harmony Oil is widely used for the lubrication of this type of equipment.

GULF INDUSTRIAL LUBRICATION

Listen to the new Gulf radio program—THE PASSING PARADE, with John Booth Nesbit—every Sunday evening, Columbia network.

... now, with GULF HARMONY OIL in service, I turn out 20% more cord!"

(says this overseer)

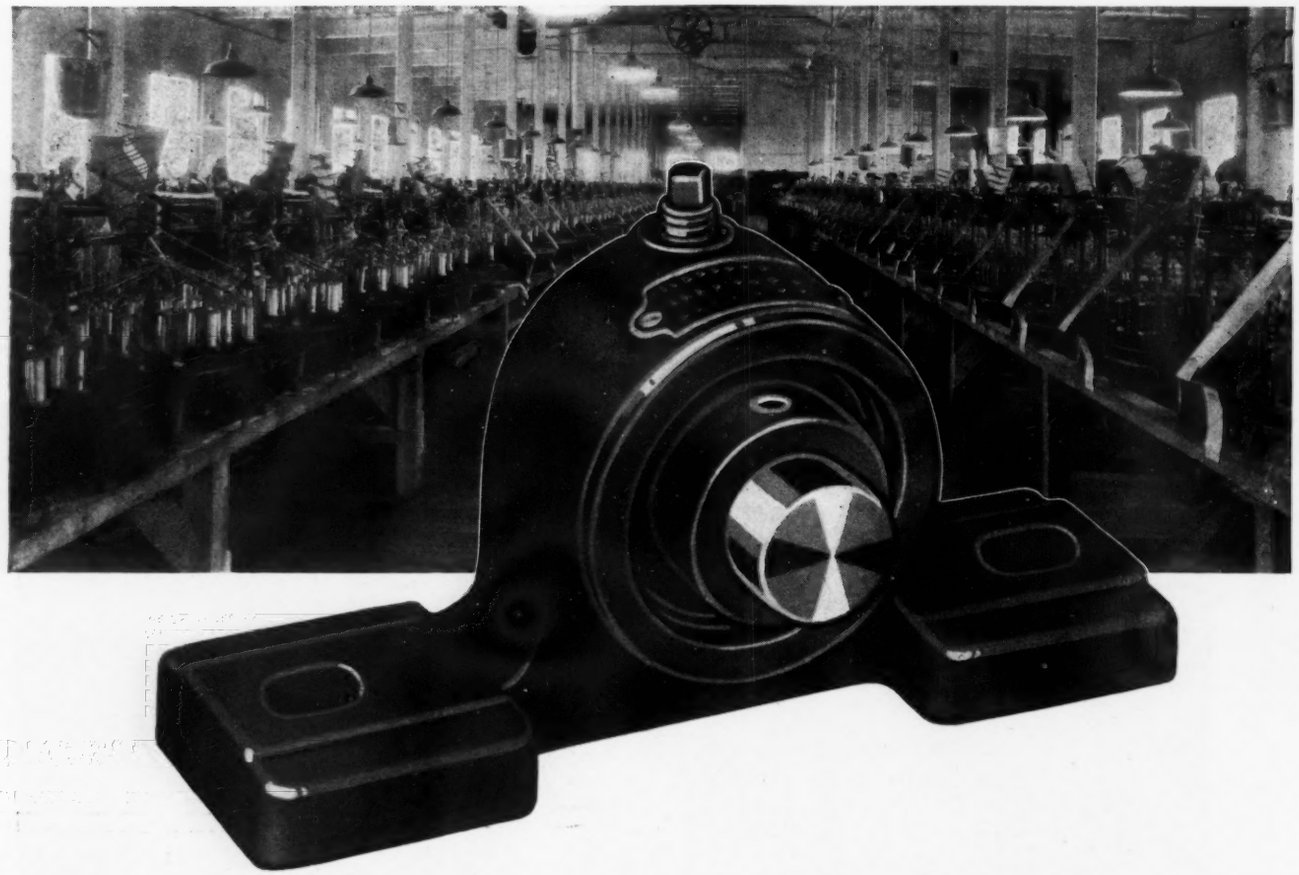
"NOBODY can tell me that good lubricating oil doesn't have a lot to do with production," says this mill overseer. "Since my boss approved using Gulf Harmony Oil for this braiding machinery, as the Gulf engineer recommended, we've increased production 20%."

Scores of mills throughout the country are reporting improved production with lower costs for maintenance and fewer operating interruptions, after Gulf's higher quality oils have been placed in service. They find that the initial cost of good oils is an extremely small item when compared with the savings effected in power and maintenance costs and the improvements in production which accompany better lubrication.

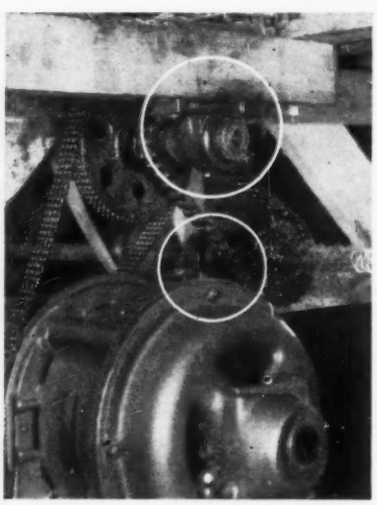
An experienced Gulf engineer, thoroughly familiar with today's problems of mill operation, is ready to give you intelligent lubrication counsel which will be of real dollar-and-cents value to you. Why not take advantage of this money-saving service at once?

Gulf Oil Corporation • Gulf Refining Company

GENERAL OFFICES: GULF BUILDING, PITTSBURGH, PA.



"24-HOUR-A-DAY OPERATION *for* 5 YEARS . . . *NO BREAKDOWNS!*"

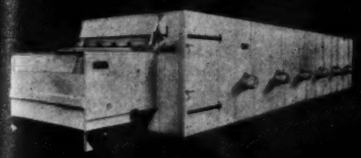


The under-bench drives for braider lines in this large Eastern mill had to meet tough conditions. Night and day operation was required. Extreme compactness was demanded, to avoid sacrifice of production space ordinary drives would have occupied. The pillow blocks on one shaft in each unit had to be mounted upside-down. And no dripping out of grease would be tolerated even though these blocks were not mounted in the conventional manner.

In the past five years this plant has put in about fifteen new complete lines, each being equipped with Fafnir SAK 1 3/16" Wide Inner Ring Ball Bearing Pillow Blocks — about 300 Fafnir Units in all. "Lubrication has been only a periodical greasing," the report states, ". . . no breakdowns or replacements . . . power and maintenance costs, with the Fafnir Units, are at a minimum." One reason why this plant has been one of the most successful in the industry . . . another reason why you should choose from the complete line of Fafnir Transmission Units for unequalled ease of installation and maximum operating economy on every transmission job. Write for the Engineering Manual. The Fafnir Bearing Company, New Britain, Conn., Dallas, Houston, Memphis.

FAFNIR BALL BEARINGS

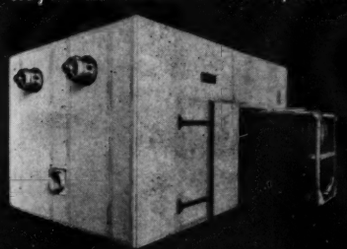
THE BALANCED LINE—MOST COMPLETE IN AMERICA



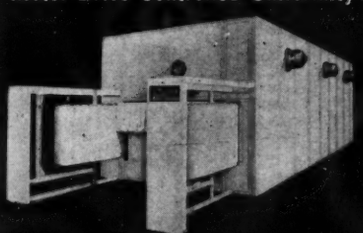
Super Dryer for Raw Stock
Saves Floor Space, Steam, Power

Dryer for Package Dyed Yarn
Uniform Drying—Better Results

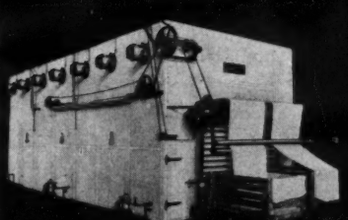
Dryer for Drying and Conditioning
Rayon in Cakes or on Cylinders



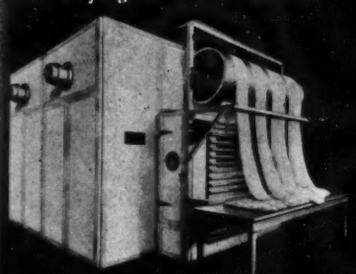
Truck Dryer for Skein Dyed Yarn
Motor Drive-Controlled Uniformity



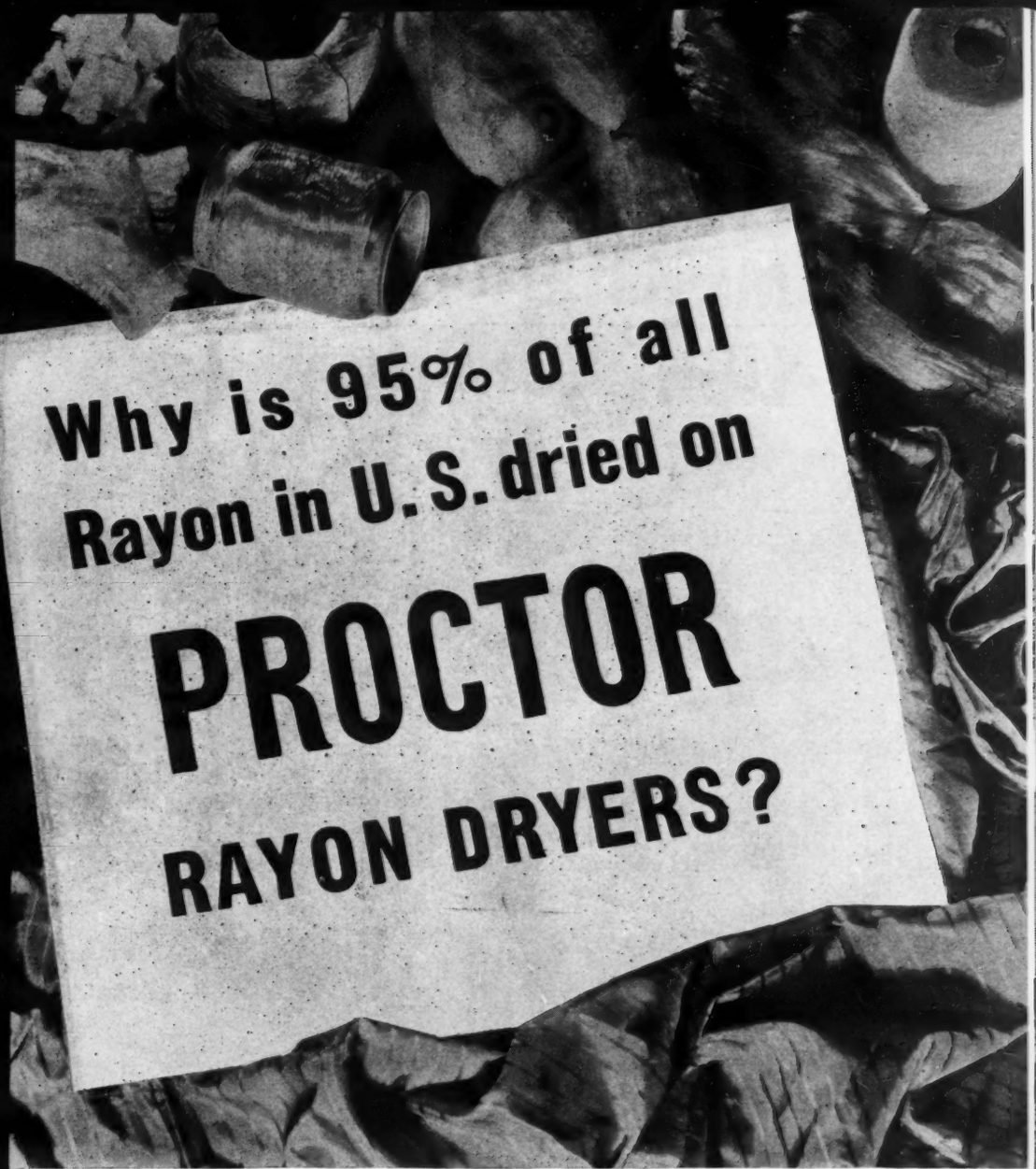
Automatic Skein Yarn Dryer for
Producing or Processing Plants



Airlay Dryer for the Tension-
less Drying of Piece Goods



Festoon Dryer for Piece Goods
(with or without Rolling Girts)



Why is 95% of all Rayon in U.S. dried on PROCTOR RAYON DRYERS?

Because there is a Proctor Dryer especially designed for every drying operation in plants producing or processing rayon. For the producing plant there are dryers for rayon in cakes, on cylinders, and in skeins . . . for cut staple and rayon waste . . . for setting twist in rayon threads. For the processing plant there are dryers for rayon in skeins or packages after dyeing . . . for cut staple after tinting or dyeing . . . for drying or heat-treating piece goods after dyeing or treatment for wrinkle-proofing. Each machine is designed to do its own particular job in the most efficient possible manner.

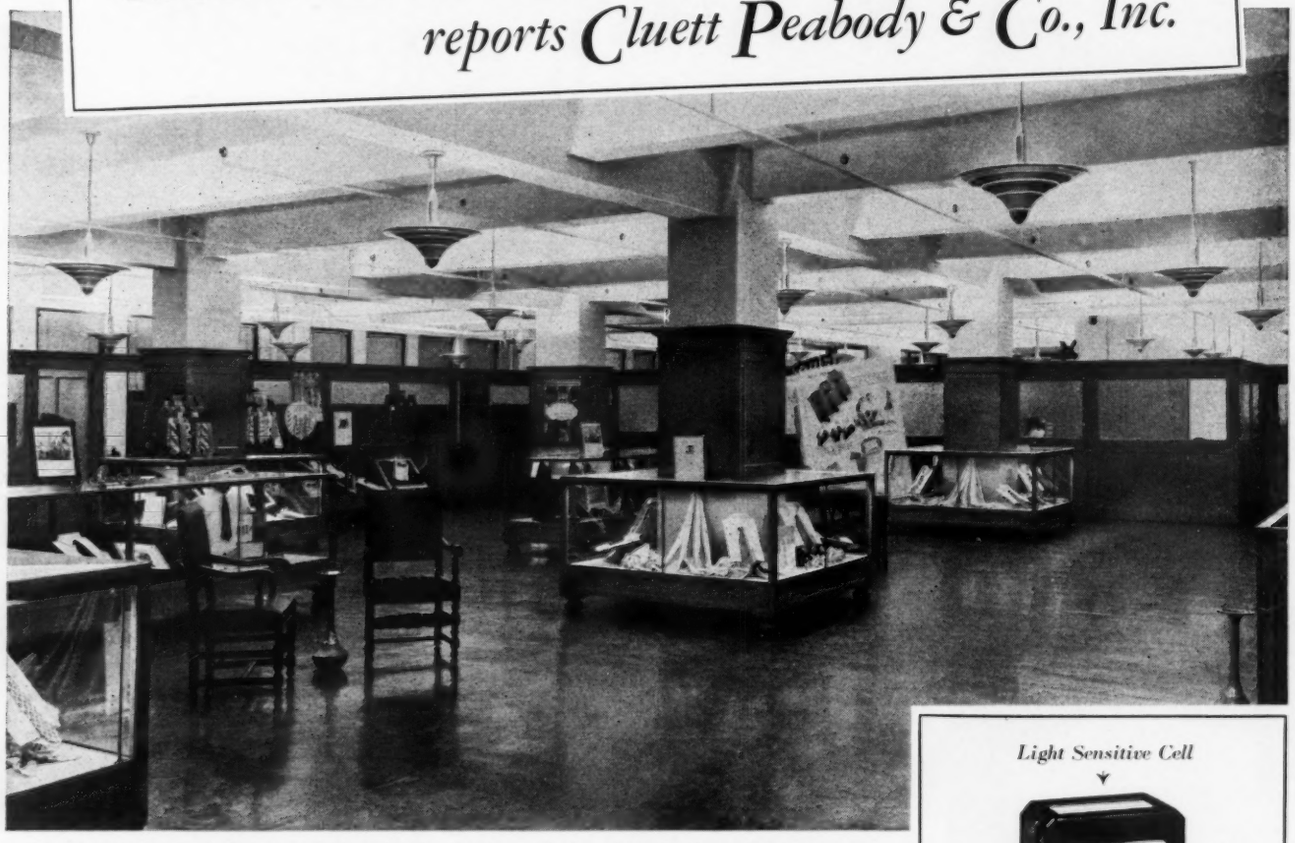
Because Proctor Dryers insure highest quality results. For more than twenty-five years before the first rayon was produced in the United States, the Proctor & Schwartz organization had been gaining experience in dryer engineering. The first production dryers built for the rayon industry were built by Proctor. That early foundation of experience together with twenty-seven years of constant improvement made it possible for the modern Proctor Rayon Dryers to maintain and even enhance the high quality for which rayon fibre is noted.

Because Proctor Dryers effect important savings. Due to the scientific design of each modern Proctor drying machine, tremendous economies are realized over dryers of less recent construction. While production is held at the highest possible level; steam, upkeep, floor space and all-around production costs are considerably reduced by these new, super-efficient dryers. Your company name and address will bring complete information on whatever Proctor Dryer interests you. Write.

PROCTOR & SCHWARTZ · INC · PHILADELPHIA

"MERCHANDISE LOOKS BETTER IN LIGHT CONDITIONED SHOWROOM"

reports Cluett Peabody & Co., Inc.



In this showroom of Cluett Peabody & Company, sixteen indirect luminaires with 500-watt G-E MAZDA *lamps provide an average illumination of 22 footcandles. The former installation provided only between 5 and 8 footcandles.*

LIGHT conditioning the showroom of Cluett Peabody & Company's Sales Division at 2 Park Avenue, New York City, makes the merchandise look better . . . gives it greater buying appeal, according to an official of that company.

In addition to the showroom, the general offices, sample rooms, and comptometer room have also been light conditioned. As a result, office workers see more easily, work with less fatigue, do a more efficient job.

Like many other leading textile manufacturers, Cluett Peabody and Company uses G-E MAZDA lamps for light conditioning. For these lamps are brighter than ever before and give more light at no added cost for electricity.

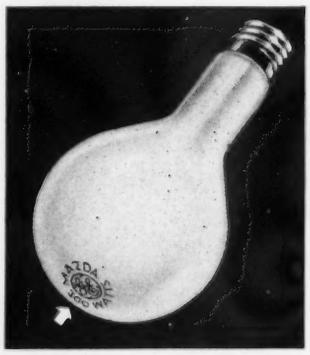
For complete information on how light conditioning can increase efficiency in your offices, showrooms, and plant, write to General Electric Co., Dpt. 166- C ,Nela Park, Cleveland, Ohio.

FOR MORE LIGHT AT NO EXTRA COST, CHANGE TO NEW AND BRIGHTER MAZDA LAMPS MADE BY

GENERAL ELECTRIC

Light Sensitive Cell

With a G-E Light Meter you can measure the lighting in your offices, showrooms and plant and see whether it meets modern seeing standards. It costs only $11.50.



LAMPS WITH THIS TRADE-MARK STAY BRIGHTER LONGER

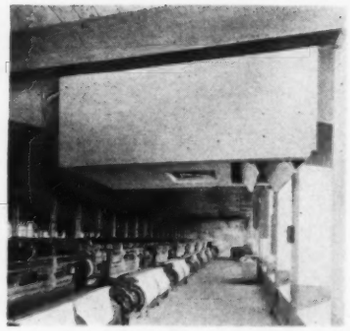
The best way to choose lubricants for your Mill is on their *record of performance*...On this basis you'll select STANDARD OIL LUBRICANTS, because for over 50 years they've been giving *dependable*, *economical* service in cotton mills throughout the South ...protecting textile machinery from wear, cutting power and lubrication costs...STANDARD OIL LUBRICANTS have pointed real savings to many mills. They'll do the same for *you*.

STANDARD OIL COMPANY

INCORPORATED IN KENTUCKY

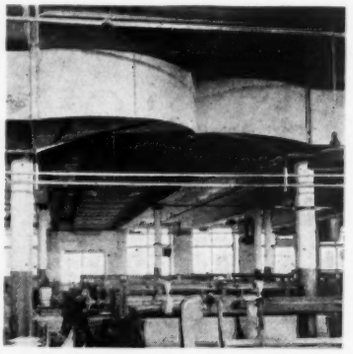
PARKS Automatic AIRCHANGER

designed to supplement your present humidifying system

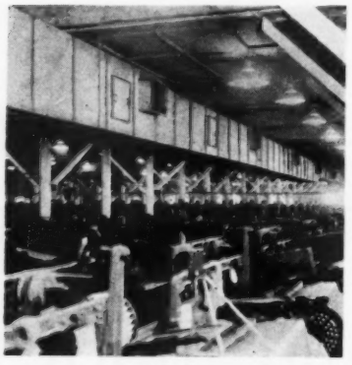


HOW IT WORKS

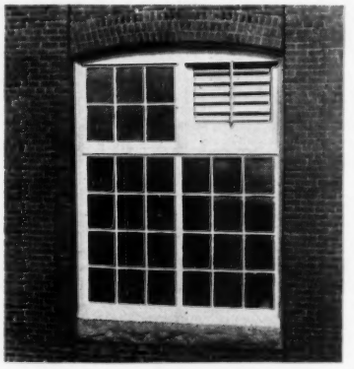
1 Fan in this mixing chamber draws in air . . . and propels it forward. Air comes from outside (opening not shown) . . . or from room (opening at bottom) or at times from both.



2 Pushed forward through ducts at ceiling, the amount of outside air . . . o its mixture with inside air . . . is regulated and automatically balanced with evaporation.



3 Discharged through a series of duct outlets, air circulates throughout the room. Free moisture from humidifiers evaporates, heat is removed . . . and marked uniformity, particularly of humidity, results.



4 The "measured service" air...and with it much of the heat . . . escapes through a series of automatic exhaust shutters. With a slight pressure in the room, leakage is outward, increasing uniformity.

Parks Graduated Automatic Airchanger Regulation (Patented)

The only system that can regulate as below

Psychrostat

HUMIDITY LOW	Starts humidifiers Minimum incoming air
HUMIDITY ABOVE THE LOW / BELOW THE HIGH	Operates humidifiers Air change balanced
HUMIDITY HIGH	Maximum air change Humidifiers restricted

Bulletin 637 tells more

PARKS-CRAMER CO • FITCHBURG, MASS. • CHARLOTTE, N. C.

THE NEW INTERNATIONAL TIME RECORDER

PAYROLL NO. 50

NAME W. A. [illegible]rmen

	STATE U. I. TAX	F[illegible] A. B.	
AMOUNT EARNABLE		3[illegible].84	PAY ENDING 6/16 193
TAX RATE		.01	TOTAL EARNINGS $ 37.84
TAX AMOUNT		.38	TOTAL DEDUCTIONS 5.38
OTHER DEDUCTIONS	Adv. 3/15 $5.00		BALANCE DUE $ 32.46

	MORNING IN	MORNING OUT	AFTERNOON IN	AFTERNOON OUT	OVERTIME IN	OVERTIME OUT	
	M 8 00	M 12 00	M 1 00	M 4 58			8
	TU 8 00	TU 12 02	TU 12 59	TU 5 03			8
	W 7 59	W 12 01	W 1 00	W 5 01			8
	TH 7 57	TH 12 00	TH 12 57	TH 5 02	TH 5 30	TH 8 34	11
	FR 8 01	FR 12 02	FR 12 59	FR 5 00			8

		HOURS	RATE	EARNINGS
	REGULAR	40	.85	34.00
	OVERTIME	3	1.28	3.84
DAYS WORKED 5	TOTAL HOURS	43	TOTAL EARNINGS	37.84

FOR COMPLETE WAGE AND HOUR RECORDS

EMPLOYEES LIKE IT because it is fully automatic and convenient for them. It permits them to audit and verify the figures on which their pay is based.

EMPLOYERS LIKE IT because it provides a simple and economical method of maintaining the accurate payroll information that is required today. Mechanically printed records are always dependably legible and indisputable.

Phone or write today to the International representative in your vicinity. He will, without obligating you in any way, explain fully this convenient way to meet modern payroll requirements.

INTERNATIONAL BUSINESS MACHINES CORPORATION

World Headquarters Bldg., 590 MADISON AVE., NEW YORK, N. Y. • *Branch Offices* IN PRINCIPAL CITIES OF THE WORLD

IT WILL PUT YOUR WEAVE ROOM ON TOP OF THE WORLD BECAUSE –

1. IT MAKES BETTER WARPS

(a.) Less Shedding (b.) No Foaming

2. IT COSTS LESS TO USE

(a.) Highly concentrated (Less required)
(b.) Lower Transportation Costs
(c.) No Waste (Clean Floors, Pipes and Kettles)

3. IT'S EASIER TO HANDLE

(a.) Dry Form (b.) Convenient Packages

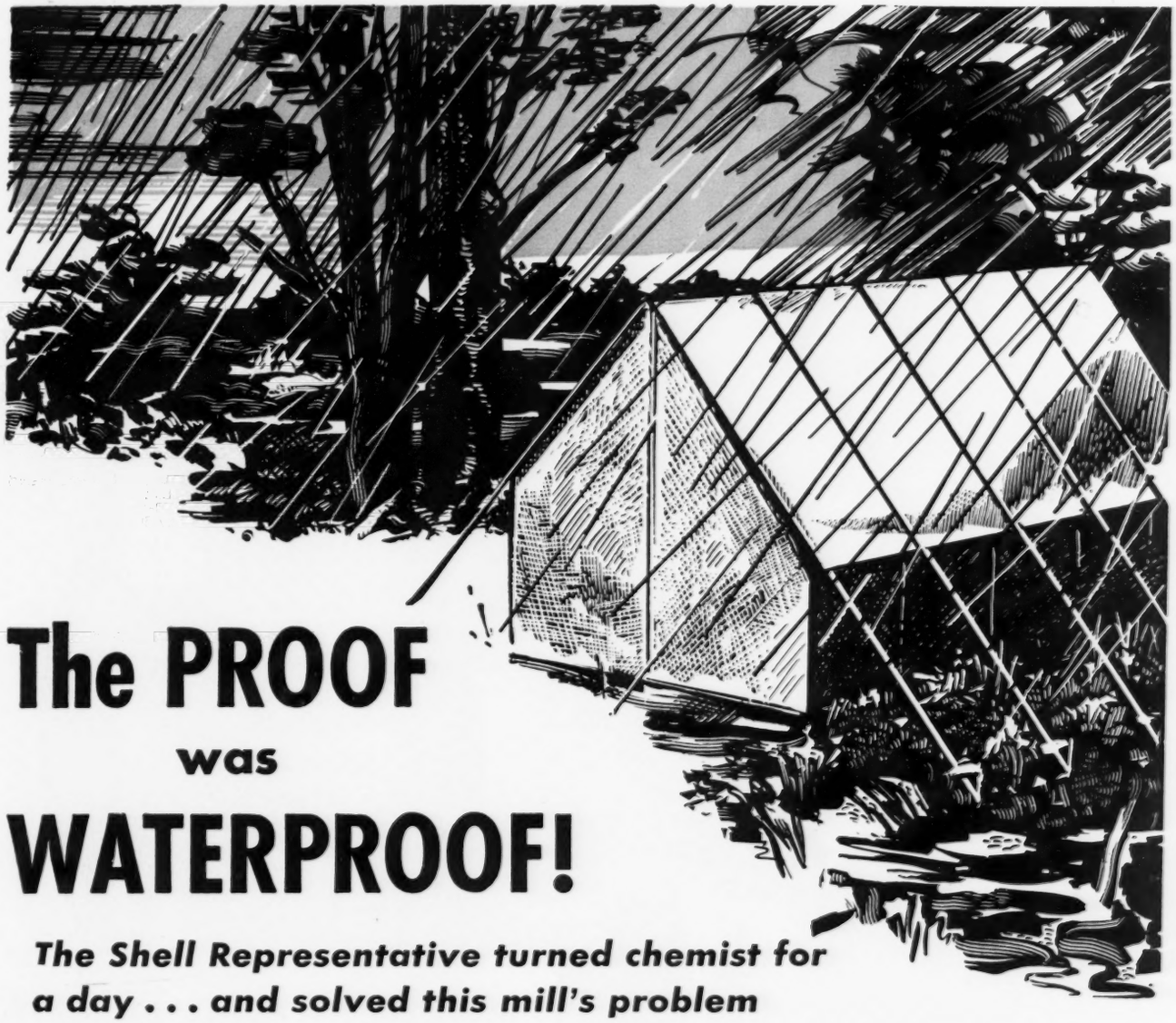
★ A new synthetic warp sizing in DRY form for COTTON warps. TRIAL LOT ON REQUEST

Arnold-Hoffman & Company, Inc.

Established 1815 . . . Plant at Dighton, Mass.

AHCO PRODUCTS PROVIDENCE, R. I. AHCO PRODUCTS

NEW YORK BOSTON PHILADELPHIA CHARLOTTE



The PROOF was WATERPROOF!

The Shell Representative turned chemist for a day . . . and solved this mill's problem

POWERS AND COMPANY are nationally known manufacturers of tents, awnings, tarpaulins, etc., with plants located in Chicago and Philadelphia.

User of a variety of Shell products, this company was well acquainted with the skill and efficiency of Shell engineers. When trouble developed in the waterproofing plant—the Shell engineer was called on to help solve it.

This plant was experiencing trouble with spotty coverage of waterproofing compound and too hard a finish. The Shell engineer worked on the waterproofing compound formula and discovered that by using a special grade of Shell's Petrolatum, together with a suitable grade of paraffin oil, it was possible to get good coverage and a soft, pliable finish.

As a result of the correction of this waterproofing fault, this plant was able to step up production and consistently turn out a fine finished product.

For years Shell engineers have served the Textile Industry in many ways. Case history No. 2379 from the Shell files is one more example of how Shell men, working with Shell products, can lick *your* particular problem—no matter how large or small. The next time a lubricating problem comes up—call or write your nearest Shell office.

SHELL *TEXTILE* LUBRICANTS

SHELL

"MUSCLING IN" on the job with U. S. ROYAL JR.

SUPPLYING THE "MUSCLE" FOR HEAVY-DUTY PICKER OPERATION IS NO ASSIGNMENT FOR "LOAFERS"

• The super-flexibility of U. S. Royal Jr. and its power to take high-speed punishment . . . its ability to stand heavy starting loads . . . crossed drives . . . frequent shifting . . . all combine to make a belt ideal for every type of textile drive—for pickers . . . cards . . . spinners . . . looms. U. S. Royal Jr. is remarkably responsive because it's made of close-woven, strong cotton duck—thoroughly impregnated with specially compounded live rubber. U. S. Royal Jr. is light . . . flexible . . . elastic. Mill superintendents everywhere report it gives Service Beyond Price and Specifications.

Write **FOR YOUR FREE COPY** of this new U. S. Transmission Belt Album. Contains photographic case histories of belt problems and applications. Shows "U. S." belts at work and in the making.

UNITED STATES RUBBER COMPANY · US · TRADE MARK

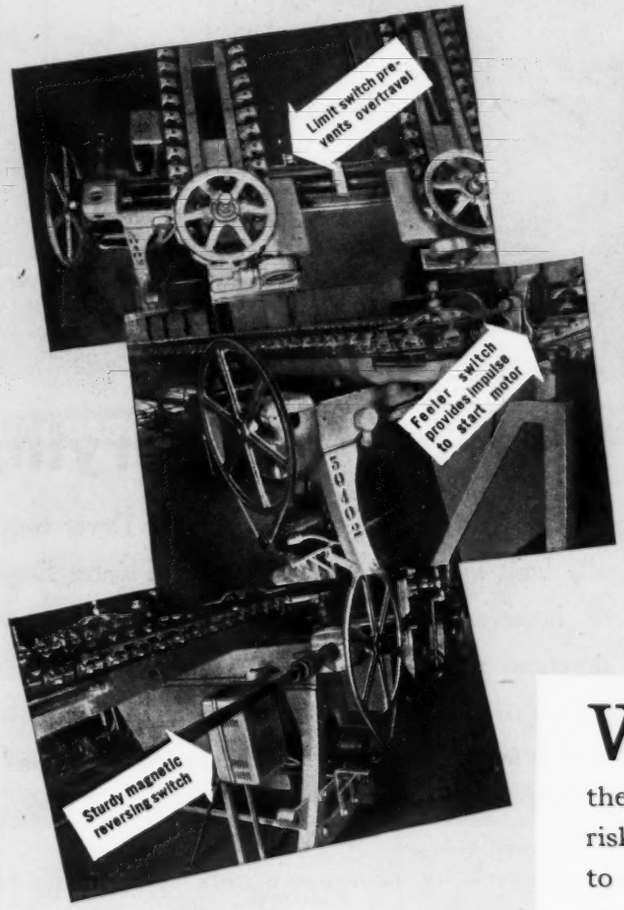
United States Rubber Company

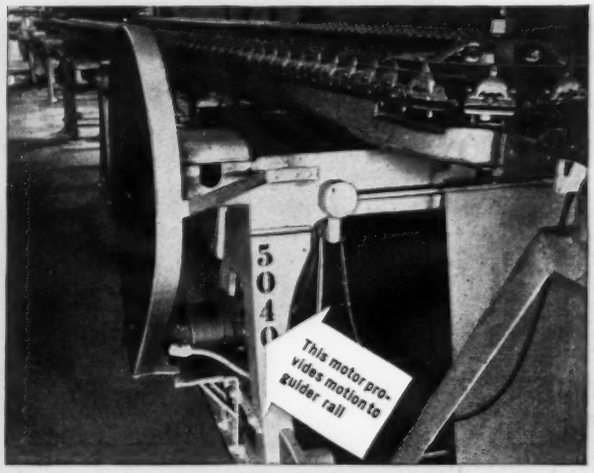
United States Rubber Products, Inc., N. Y.

This G-E Guider Equipment

PLACES EACH RAIL CORRECTLY

As the Cloth Enters the Tenter





Van Vlaanderen tenter with General Electric guider equipment. Note how this guider equipment can easily be installed on existing tenters. Pictures taken at Bradford Dye Associates plant, Bradford, R. I.

HOW IT WORKS

The blades of feeler switches on each side of the entering end of the tenter are continuously in contact with the edges of the incoming cloth. Each blade exactly follows the selvage, and instantly actuates motors beneath the tenter. These G-E motors are built for quick starting, stopping, and reversing. Operating with staccato action, these motors move the rails, in or out, to the exact position for locating each clip correctly.

WITH this electric guider equipment, the swinging rails are continually adjusted to the correct position. Thus, you can eliminate the risk of uneven tentering, delays, and spoilage, due to misplaced clips. This equipment sets a new standard of speed and accuracy. It directly contributes to the production of cloth of more uniform quality.

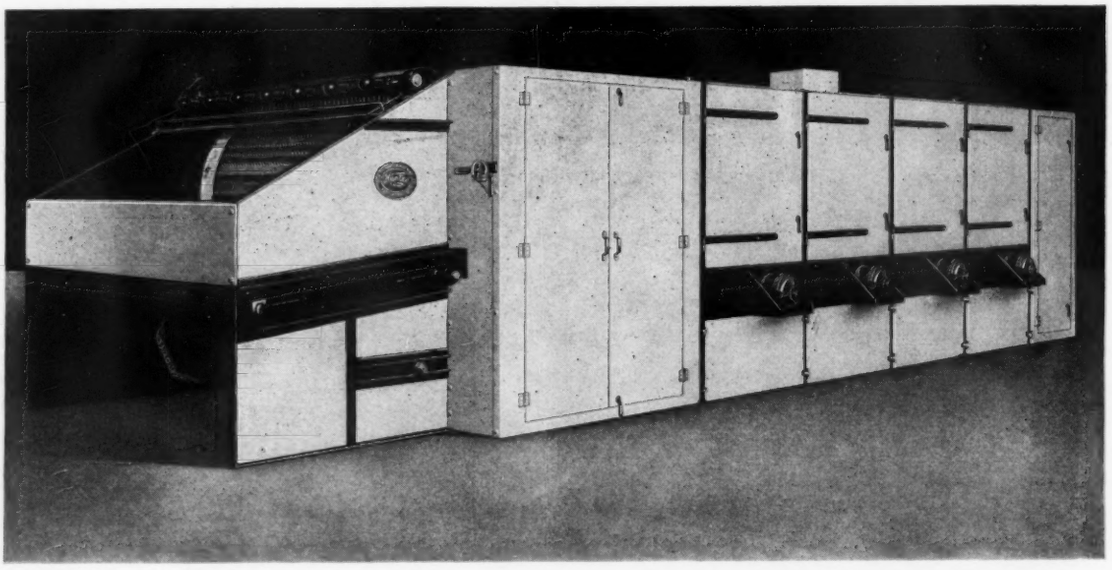
Ask for further information

To obtain details on the application of this equipment, state the essential facts regarding the operation of your tenters at present, and address your inquiry to Dept. 6-323, General Electric, Schenectady, N. Y.

GENERAL ELECTRIC

011-315

The newest development



In Automatic Feeding and Drying

An exclusive Hunter development, the New Rotary Feeder and Raw Stock Dryer consists of a novel rotary automatic feed usually built as an integral part of the Hunter Duplex Raw Stock Dryer. The Rotary Feed, however, may be furnished as a separate unit to replace old feeders on your present dryers as well as with new machines. The Rotary Feeder is adaptable to any type or kind of raw stock and is available in any desired width or capacity. It may be used to feed any machine commonly requiring hand or automatic feeding of stock.

HUNTER
Automatic Rotary Feeder and Raw Stock Dryer

ADVANTAGES — Ends ordinary maintenance costs — eliminates feed droppings — reduces cleaning time between runs — assures practically all stock fed into the hopper will be delivered at discharge end of dryer apron — lower costs — increases production — entirely automatic.

Without obligation, please send Bulletin R F describing Hunter's newest Automatic Rotary Feeder and Raw Stock Dryer.

NAME..... TITLE.....

COMPANY .....

CITY..... STATE.....

JAMES HUNTER MACHINE COMPANY
NORTH ADAMS
MASSACHUSETTS

SOUTHERN AGENTS:
Carolina Specialty Co., Charlotte, N. C.

WESTERN REPRESENTATIVE
E. G. Paules, 343 Bendix Bldg., 1206 Maple St., Los Angeles, Cal.

CANADIAN AGENTS: Colwool Accessories Limited
126 Wellington St., West, Toronto

DUPONT MEASURE PAINT VALUE BY THE PERFORMANCE YARDSTICK DUPONT

ARE YOU PAYING TOO MUCH FOR PAINT?

If price alone is your only guide, you may be losing money

COST PER JOB IS THE TRUE MEASURE OF PAINT ECONOMY..AND THIS IS WHY

YOU DON'T buy mill white just to have a pile of 5-gallon cans in your storeroom. What you really buy are coats of paint *on your walls and ceilings*.

And the mill white that costs least to apply—and least to maintain—saves you the most money, regardless of its price per gallon.

But you don't have to pay highest prices, either.

Judge the mill white you buy by its performance—how quickly and easily it goes on (to save time); how it hides and spreads (to save gallonage); how long it keeps its whiteness (to save repainting cost).

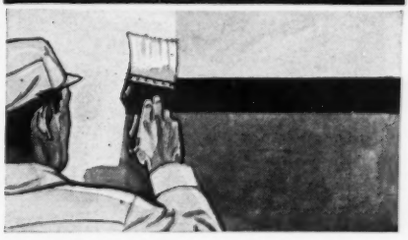
DULUX Mill White has the *precise balance* of speed of application, hiding and spreading power, and retention of whiteness to give you lowest cost per job. Its amazing hiding is not achieved at the expense of its spread or easy working qualities. In durability and whiteness retention DULUX is in a class by itself. It is not the cheapest, nor yet the most expensive mill white.

The illustrations explain just why DULUX costs you least to apply and least to maintain.

QUICKER TO APPLY

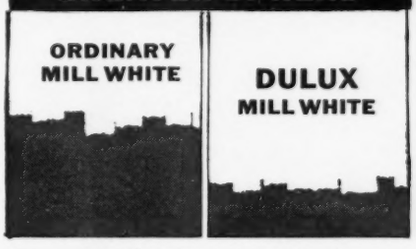
The easy "no-drag" working qualities of DULUX make it quicker to apply. This saves time, labor and money.

BETTER HIDING



The intense hiding power of DULUX means fewer coats needed for the job. This saves gallons and painting time.

GREATER SPREAD



Because DULUX spreads farther per gallon, you need less paint to do the work. Another big money-saver.

LASTS LONGER

DULUX keeps its whiter whiteness *longer*. Needs fewer repaintings. A *great* saving in repaintings necessary.

SEND IN THIS COUPON FOR DETAILS

DUPONT

DULUX MILL WHITE

REG. U.S. PAT. OFF.

STARTS WHITER · STAYS WHITER

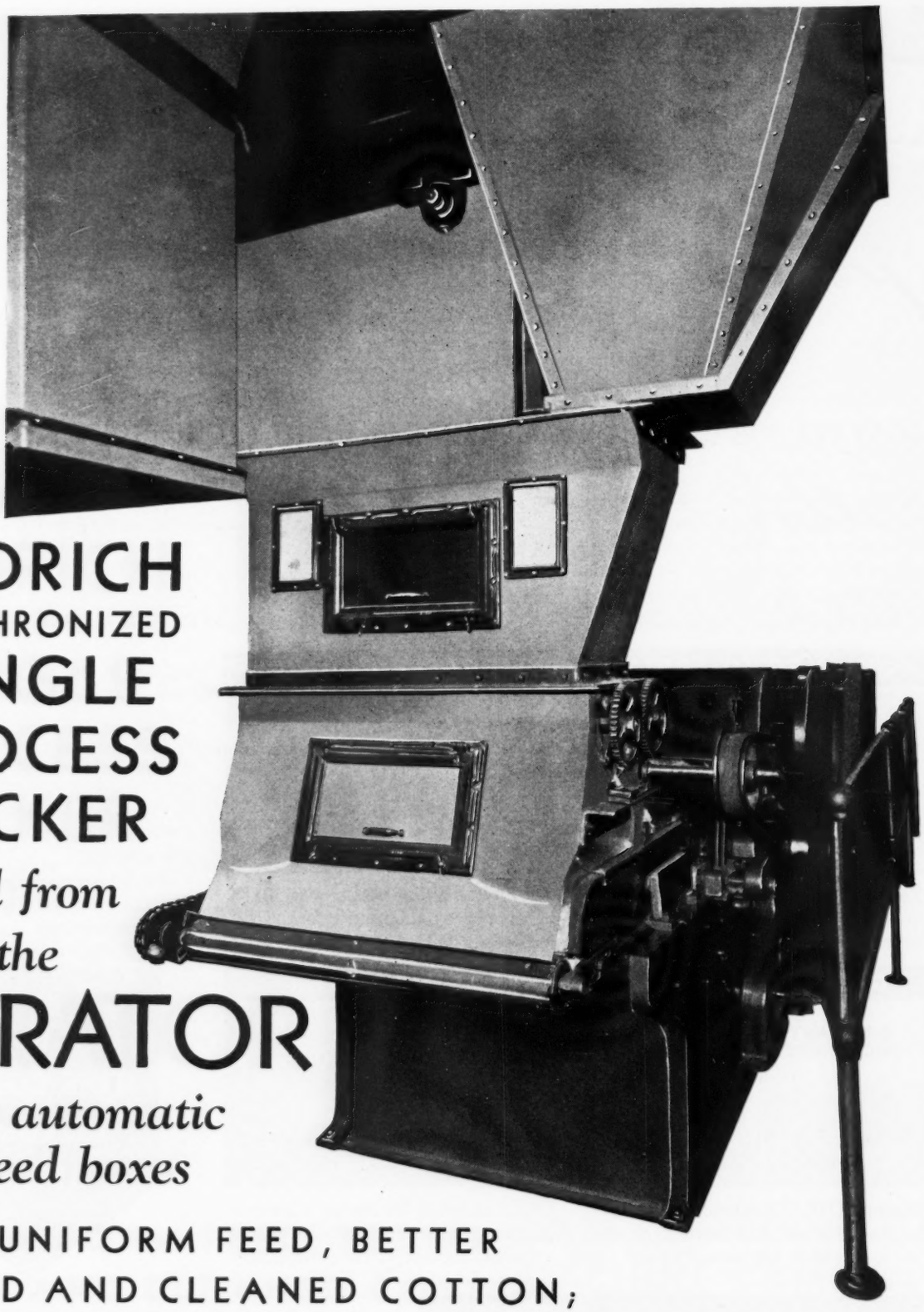
E. I. du Pont de Nemours & Co., Inc., Dept. C-98
Finishes Division, Wilmington, Delaware
Please see that I get full information about DULUX Mill White.

Name.....

Firm Name.....

Address.....

City.....*State*.....



ALDRICH
SYNCHRONIZED
SINGLE PROCESS PICKER
fed from the
GYRATOR
by automatic feed boxes

MORE UNIFORM FEED, BETTER OPENED AND CLEANED COTTON; CLEANER AND EVENER LAPS. NO HOPPER FEEDERS.

AldricH MachinE WorkS

Greenwood, South Carolina

MORE YARDAGE *per pound of dyestuff* *with* SUPERCLEAR

Clear, Full-Toned Prints Maximum Penetration

● Superclear and Supertex printing gums, because of their extreme penetrating and color-carrying properties and the fact that more shallow engravings are possible, make greater economies in dyestuffs obtainable.

The addition of Superclear or Supertex to starch, dextrine or tragacanth thickening pastes gives these thickeners greater fluidity, greater penetration and better lubrication.

Added to pigment colors, particularly pigment whites, these printing gums give the more fluid body necessary for continuous printing.

After aging and steaming, Superclear or Supertex is easily removed with a light wash because of their extreme solubility.

JACQUES WOLF & CO.

MANUFACTURING CHEMISTS AND IMPORTERS . . . PASSAIC, NEW JERSEY

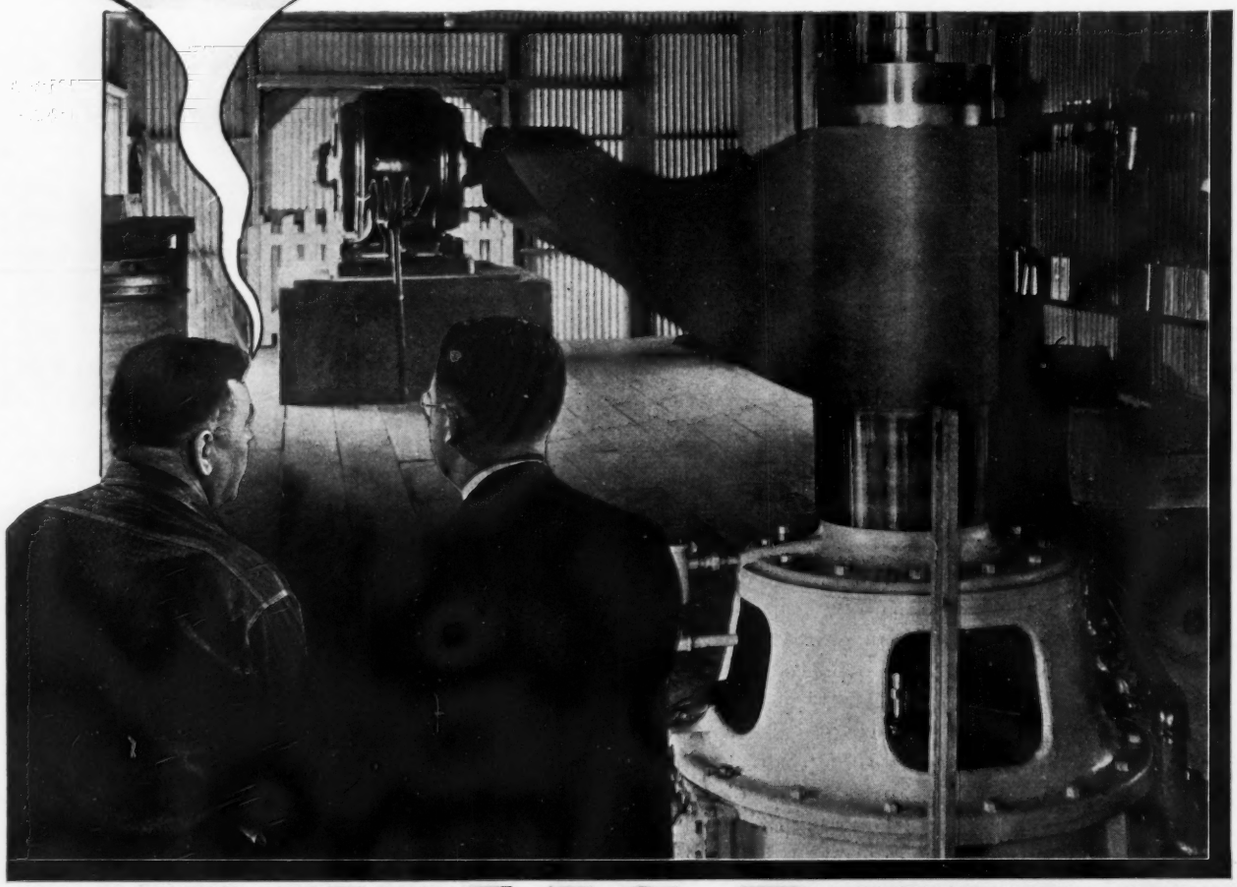
Warehouses: **Providence, R.I.; Philadelphia, Pa.; Utica, N.Y.; Chicago, Ill.; Greenville, S.C.; Chattanooga, Tenn.**

CHALLENGER

"We never had a BETTER BELT in this Plant"

A TRANSMISSION BELT cannot be judged by its appearance. Only by constant use, year after year, can its quality be measured. To get the full story of belt values, go to the men in your plant. They know how long belts ought to last and which brands give the best service.

If, like thousands of manufacturers, you are now using Challenger Square Edge Belting, we leave such an investigation to speak for itself. Chances are that one of your experienced men will point to a Challenger and tell you that "we never had a better belt in this plant."



REPUBLIC RUBBER

Division OF LEE RUBBER AND TIRE CORPORATION

YOUNGSTOWN, OHIO

Manufacturers of HOSE
BELTING • PACKING
MOLDED PRODUCTS

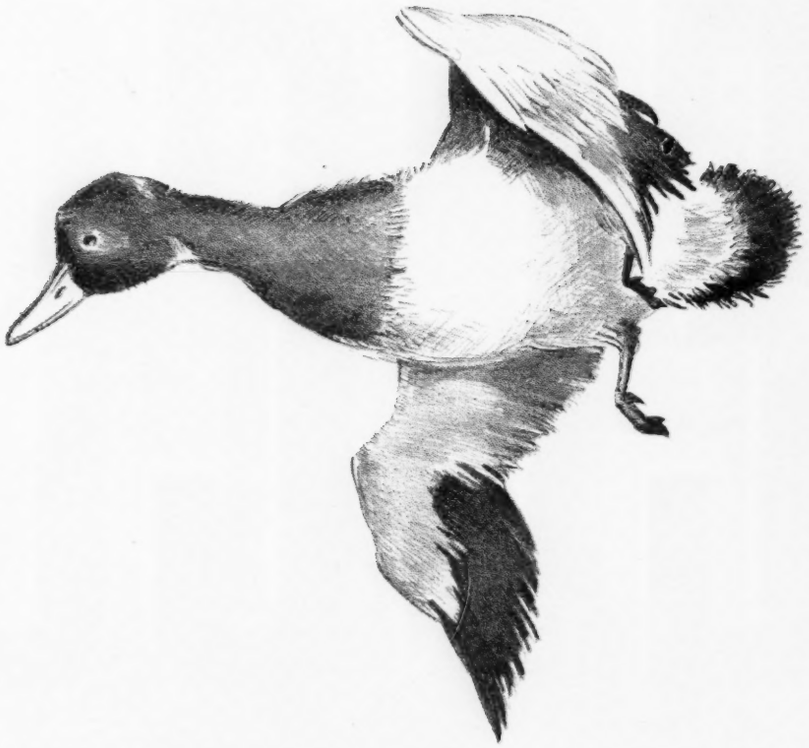
ORDER REPUBLIC RUBBER PRODUCTS FROM YOUR DISTRIBUTOR

BECCO

ELECTROLYTIC HYDROGEN PEROXIDE

"BECCO" symbolizes the ***modern*** trend in bleaching . . . yielding results which meet today's high requirements for quality, and with true economy . . . A ***BECCO*** representative, backed by Becco Technical Service, will gladly explain how Becco Hydrogen Peroxide will fit your particular problem. Write: BECCO SALES CORPORATION, BUFFALO, N. Y. . . Boston . . New York City . . Philadelphia . . Chicago . . Charlotte.

plus BECCO Technical Service



Emmons Comes South!

From its new plant in Charlotte, the Emmons Loom Harness Co. now offers southern mills complete and rapid service.

Known as the Charlotte Division of the Emmons Loom Harness Company . . . located at 118½ West 4th Street . . . and manned by the same personnel formerly employed by the Reed Department of the Charlotte Manufacturing Company . . . this new branch will manufacture reeds and will stock standard steel heddles, cotton harness and other loom equipment.

Mr. George Field has been appointed Plant Manager.

Mr. George Bahan will continue as District Representative . . . and will be pleased to receive your inquiries regarding

"CERTIFIED" STEEL HEDDLES

Inspected and approved by the Emmons Control of Quality Laboratory . . . periodically checked and tested by Pittsburgh Testing Laboratory.

CHAFELESS CORD COTTON HARNESS

Long staple cotton, given 5 smooth coats of specially prepared varnish, baked for 48 hours. Humidity proof. Super smooth. Strong as Gibraltar.

STANDARD AND TUBULAR ALUMINUM HEDDLE FRAMES

Life-long rigidity. Less friction on warp yarns. Heddle bars easily inserted or removed. Less wear on them. Less vibration.

MULTIPLE YARN SPACE REEDS

Dents polished 6 times, spaced accurately within 1-100th inch. Freer warp movement. No streaking from uneven spacing. All-metal, semi-metal or pitchband.

EMMONS LOOM HARNESS COMPANY — LAWRENCE, MASS. — CHARLOTTE, N. C.

GET OVER THE "Peak" with DODGE LOOM DRIVES

THE Dodge Loom Drive assures more and better cloth at lower operating costs.

The Dodge Loom Drive will smooth out loom production and reduce breakage of parts — It meets "peak" requirements because the flywheel provides a source of reserve power — Its expanding ring clutch can be instantly engaged or disengaged, belt slippage and "power-wasting" parts are eliminated.

You can be assured of increased production of higher quality cloth by installing Dodge Loom Drives. Write for copy of Dodge Bulletin A-236.

DODGE MANUFACTURING CORP.
MISHAWAKA, INDIANA, U.S.A.

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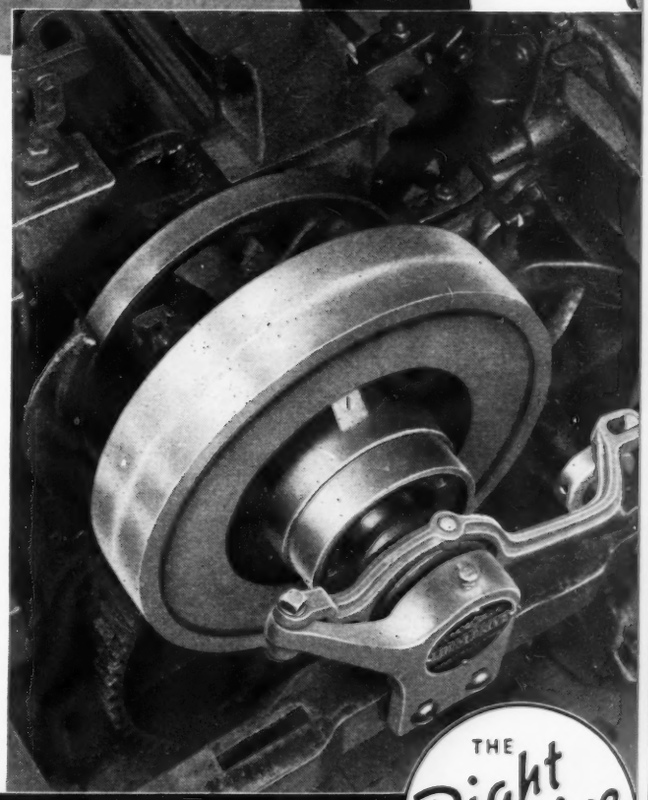


THE Right Drive FOR EVERY JOB

DODGE
MISHAWAKA

THERE IS ADDED VALUE IN THE NAME DODGE

"If I were an ADVERTISING MANAGER"

That's just one of the talks to be delivered anonymously by a masked speaker that will set every man thinking at the Annual Conference of National Industrial Advertisers Association in Cleveland, September 21-23. A second masked speaker will tell what he would do if he were a publication representative.

We're not going to tell you much here—just highlight the program enough to make your mouth water and your brain tingle.

T. M. Girdler, Chairman, Republic Steel Corporation, is scheduled for the opening address and when "T. M." talks he says something.

J. H. McGraw, Jr. will talk on "What I Would Do *Now* If I Were An Industrial Advertising Manager."

The new Publisher's Statement will receive full discussion.

Clinic sessions, so popular last year, will again cover a wide range of interesting subjects. Two half-day sessions instead of one.

A general conference session will cover such subjects as "Preparing the Plan", "How to Gather Usable Material", "Copy Technique", "How to Sell Management", "Co-ordinating Sales and Advertising" and "How and Why to Use an Industrial Agency."

Another session will deal with "Problems of the Small Advertiser", "Production Problems", "Public Relations"—and there are many others.

If I were an Advertising Manager, I certainly would start now to make plans to attend the 16th N. I. A. A. Conference even if I had to hitch-hike to Cleveland. And I would send in my advance registration now to—Ed. Bossart, Bailey Meter Company, Ivanhoe Road, Cleveland, Ohio.

IF I EMPLOYED AN ADVERTISING MANAGER—I would make certain that he attended this Conference, because changing times and markets demand a changed viewpoint—a new viewpoint that can be obtained only by hearing discussions by men whose experience is up-to-the-minute—right up to September 21st.

NATIONAL INDUSTRIAL ADVERTISERS ASSOCIATION

100 EAST OHIO STREET • CHICAGO, ILLINOIS

RAPIDASE

DE-SIZING

Universally preferred for—

RAPID, EFFICIENT

DE-SIZING

OF

RAYONS, COTTONS and MIXED GOODS

•

WALLERSTEIN COMPANY, INC.

180 MADISON AVENUE

NEW YORK

CONTINUOUS PRODUCTION *Pays* BIGGER DIVIDENDS

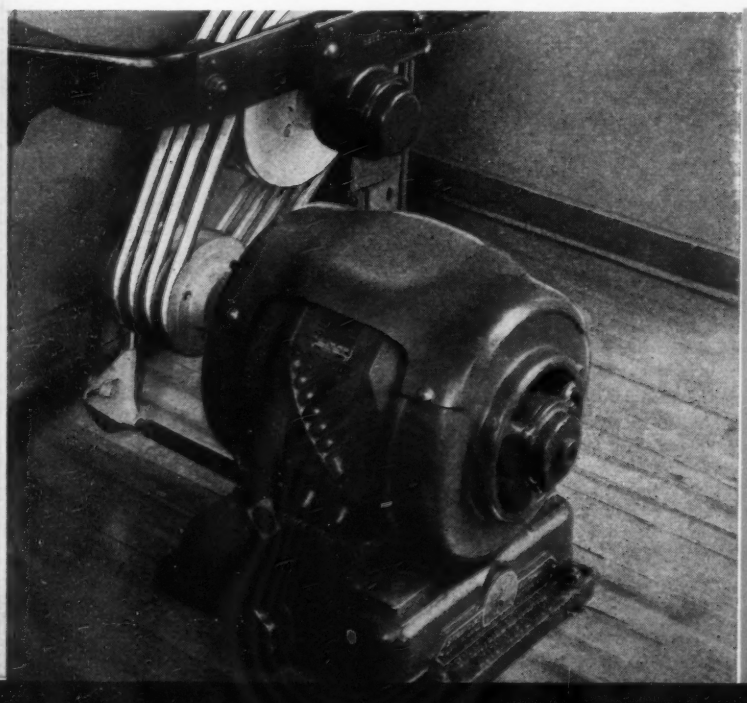
Get the Facts on Allis-Chalmers QUICK-CLEAN Motors! Learn How They Beat Production Losses . . . Keep Machines in Service . . . Pay for Themselves in the Savings that Continuous Production Brings!

On a cost-per-year basis, plant owners throughout the textile industry have found that Allis-Chalmers QUICK-CLEAN "Lo-Maintenance" Motors pay bigger dividends! And it's easy to understand why! QUICK-CLEAN Motors are built to give years of continuous, trouble-free operation!

And the machines they run stay on the job . . . no time-wasting, money-wasting shut-downs!

That's how you get continuous production! And continuous production pays bigger dividends! Actually, you get more than just an ordinary motor when you specify Allis-Chalmers. You get a motor especially designed and built to meet the requirements of the textile industry. That's why you get a motor that will stand up on the toughest jobs . . . stay on the job year after year, under the severest service demands.

Near you, in an Allis-Chalmers district office, is an engineer whose job is to key motors to your production demands. Find out how you can get continuous production with Allis-Chalmers QUICK-CLEAN Motors. Find out how you can get bigger dividends! Call him . . . today!



ESPECIALLY BUILT FOR TEXTILE MILLS, this Allis-Chalmers QUICK-CLEAN Motor means trouble-free operation. Its glass-smooth surfaces give dust and lint no foothold . . . all working parts are positively dust-sealed . . . lint and dust pass right through the big unrestricted air passages.

ELECTRICAL DIVISION

ALLIS-CHALMERS

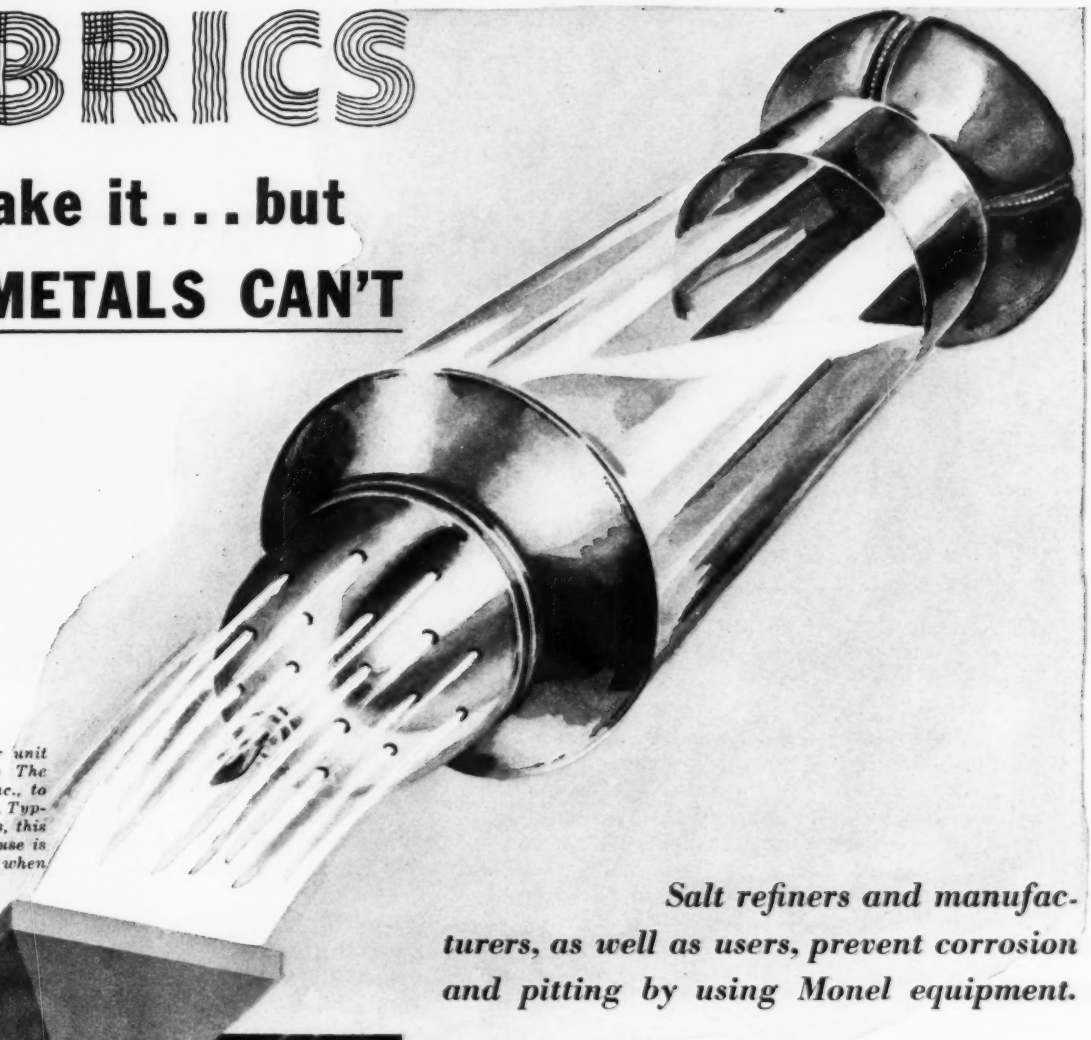
MILWAUKEE · WISCONSIN

MOTORS FOR ALL APPLICATIONS FROM ½ HP AND UP

954-A

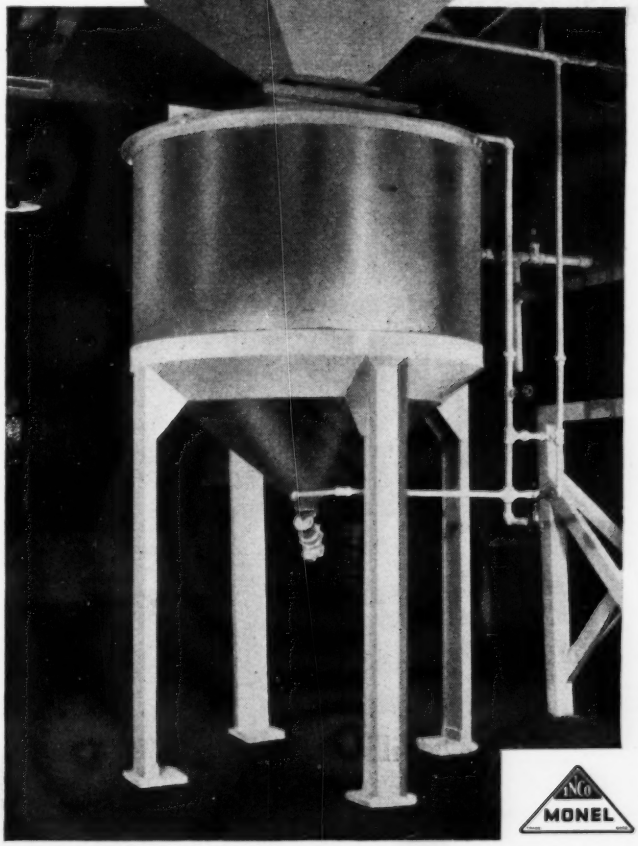
FABRICS

can take it . . . but MOST METALS CAN'T



Monel rock salt dissolver unit as supplied at cost by The International Salt Co., Inc., to users of "Isco Rock Salt". Typical of those in dye plants, this unit after several years' use is as serviceable now as when installed.

Salt refiners and manufacturers, as well as users, prevent corrosion and pitting by using Monel equipment.



Corrosion-pitting by common salt, as you know, often plays havoc with dyeing equipment. How prevent this trouble? Consider how *refiners, producers* and *users* of salt and brines, solve this common problem:

Spiral and bucket salt conveyors, salt screening equipment, salt washing hoppers, salt dryers . . . also brine tanks and covers, brine-pump rods, nozzles and piping exposed to brine spray . . . all are subject to salt corrosion-pitting, and so are made of Monel.

What Monel does in the salt refinery and food plants it also does in the dyehouse. For example: The rock salt dissolver illustrated at left is still in use and in excellent condition, after several years of service. Furthermore, tons of Monel dyehouse equipment after years of use show no signs of corrosion-pitting by common salt.

Monel stoutly resists corrosion from dyehouse liquors, as well as from brine, and so protects yarns and fabrics from off-color effects. Tough, strong and wear resistant, this long-life metal assures years of service for equipment. Write for further information on Monel. Address:

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street **New York, N. Y.**

MONEL

"Monel" is a registered trade-mark of The International Nickel Company, Inc., which is applied to a nickel alloy containing approximately two-thirds nickel and one-third copper.

ABSOLUTE AUCTION

By order of

THE MERRIMACK MANUFACTURING COMPANY

at

LOWELL, MASS.

(Foot of Dutton Street)

of

A PART OF THE MACHINERY AND EQUIPMENT NOW IN ITS LOWELL PLANT

On the premises

MONDAY, OCTOBER 3, 1938, at 10:00 A.M.

The Sale Includes: 90 Saco-Lowell 228-240 Spindle Tape Drive Spinning Frames 3″ and 3½″. 34 Lowell 64-96 Spindle Wet and Dry Twisters 3½″ to 5″. **3 Warp Compressor Co. Dry Slasher Warp Compressors 76″.** 2 Saco-Lowell Two Cylinder Slashers 60″ x 84″. Davis & Furber 80″ Dressing Reel. Brownell 6 Spindle Twisting Machine.

707 Draper Automatic (Model H) Side Cam Looms, 76″, 70″, 67″, 39″ Reed Space. 612 Draper Automatic Knowles and Dobby Head Looms, 70″, 67″, 58″ Reed Space. 41 Draper Dobby Head Plush Looms, 67″ Reed Space. **17 Crompton & Knowles Dobby Head Jacquard Plush Looms,** 66″ Reed Space, 2 x 2 Box. **37 Crompton & Knowles Dobby Head Plush Looms,** 66″ and 60″ Reed Space. **Crompton & Knowles Automatic Side Cam Plush Loom,** 66″ Reed Space.

Royle Jacquard Cutting Machine and Lacing Machine. **3 Parks & Woolson 66″ Electric Double & Triple Roll Tigers. 5 Parks & Woolson 66″ One and Three Blade Cloth Shears.** 2 Powers 70″ Plush Splitters. 2 Plush Cutting Machines. Parks & Woolson 66″ Cloth Measuring Machine.

2 Textile 3 Roll Embossing Calenders 60″. **8 Sets Butterworth and Granger Copper Dry Cans** 36″ x 23″ to 114″ x 60″. 8 Steel Dye Jigs 72″. Yarn Washing and Dyeing Machine. Continuous Chain Warp Dyeing Machine. 70 Ft. Tentering Frame 66″. American Gas 72″ Rotary Singer. Hunter 8 String Washer. Hunter Fulling Mill. Parks-Cramer Humidifying Heads. Overhead Tracking. Water Pumps. 2 Ingersoll-Rand Air Compressors, 7″ x 5″ and 4″ x 4″. **675 General Electric ¾ to 3 H. P. Motors,** 220 and 550 Volts. Holtzer-Cabot ½ K. W. Generator Set. G. E. 200 H. P. Motor, 2200 Volt, 3 Phase, 60 Cycle, 600 R.P.M.

Note: The Merrimack Manufacturing Company is consolidating its Lowell operations. It has directed us to sell at **Absolute Unrestricted Auction** all the Real Estate, Machinery and Equipment not required for future operations.

(Catalog covering Manufacturing Real Estate to be sold on Saturday, October 1st, 1938 supplied on request.)

Detailed descriptive catalog on request.

SAMUEL T. FREEMAN & CO., *Auctioneers*

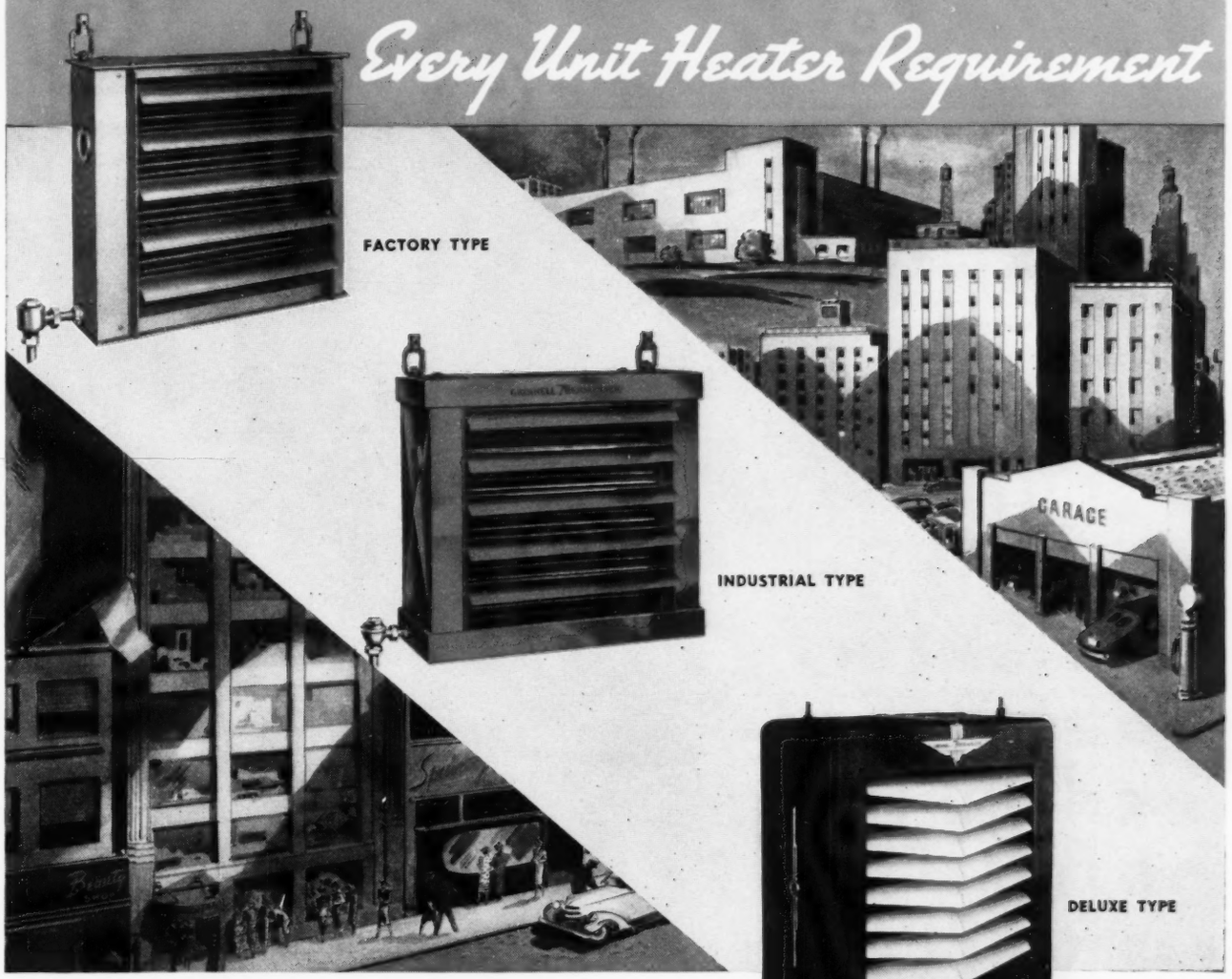
Established Nov. 12, 1805

80 FEDERAL STREET, BOSTON

1808-10 Chestnut Street, Philadelphia **27 William Street, New York**

THERE IS A THERMOLIER *To meet*

Every Unit Heater Requirement



THREE TYPES . . . THIRTY SIZES

No matter what your heating requirements are, you may safely specify "Grinnell Thermolier." For eighty years of heating experience are back of Thermolier's three types and thirty sizes. Thus each Thermolier installation is "tailor-made" to fit the exact requirements of an individual building and an individual heating condition. Each model, each size, embodies the exclusive Thermolier Internal Cooling Leg which continuously drains "lazy water", keeps all of the heater working, all of the time . . *plus* thirteen other exclusive Thermolier features. You can count on heating satisfaction and fuel savings when you install Thermoliers. Write for the Thermolier Catalog. Grinnell Co., Inc., Executive Offices, Providence, R. I., Branch offices in principal cities of U. S. and Canada.

GRINNELL THERMOLIER

THE UNIT HEATER WITH 14 POINTS OF SUPERIORITY

Aye, SIR

AND A **SAVINGS**, TOO
with
JACOBS
Individualized

- LABELS
- BANDS
- TICKETS
- STICKERS
- HANG TAGS
- BOX TOPS
- RIDERS

an Inquiry will not obligate you

THRIFT

JACOBS
GRAPHIC ARTS COMPANY
CLINTON, S. C.

SKF

DYEING 80 YARDS PER MINUTE
REQUIRES DEPENDABLE BEARINGS
ON DYERS

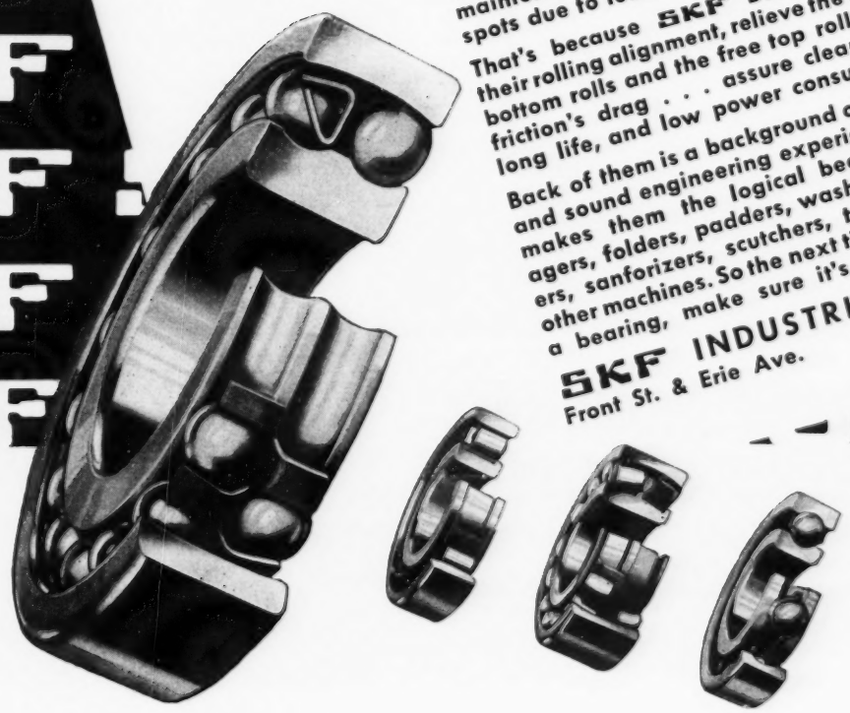
BUILT BY THE TEXTILE-FINISHING MACH'Y CO. SKF-EQUIPPED

When cloth changes color at 80 yards per minute in this Continuous Dyeing Machine, it does not stop for bearing trouble. It keeps going . . . in pace with the production schedule at minimum maintenance costs . . . and free from spots due to lubricant leakage.

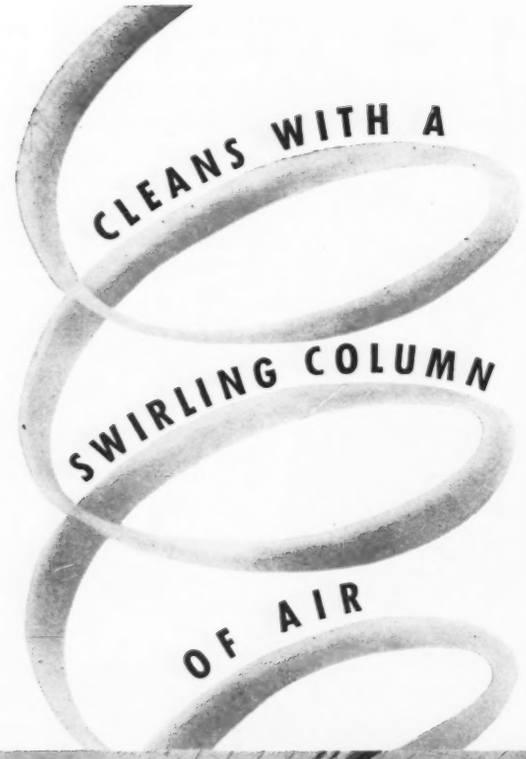
That's because SKF Bearings, with their rolling alignment, relieve the driven bottom rolls and the free top rolls from friction's drag . . . assure cleanliness, long life, and low power consumption.

Back of them is a background of quality and sound engineering experience that makes them the logical bearings for agers, folders, padders, washers, soapers, sanforizers, scutchers, tenters and other machines. So the next time you use a bearing, make sure it's an SKF.

SKF INDUSTRIES, INC.
Front St. & Erie Ave. Phila., Pa.



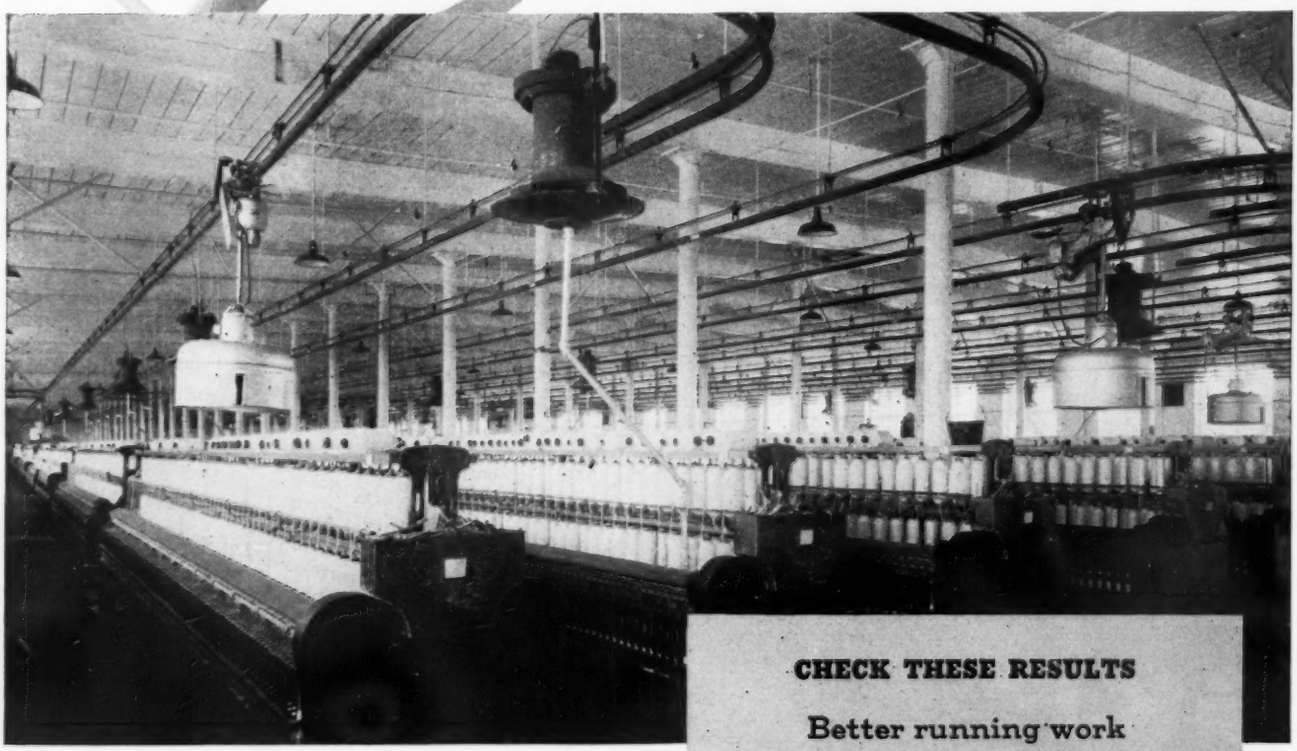
SKF makes more types and sizes of ball and roller bearings than any other manufacturer in the world.



ACTUALLY a controlled cyclone with high velocity currents swirling around creel boards and guides removing lint before it can accumulate. Roving is protected against damage yet kept thoroughly clean. No lint is blown from one frame to another. Velocity can be carefully adjusted to meet changing conditions.

Such automatic cleaning relieves your spinners of most cleaning operations and enables them to produce more and better running yarn. Ends-down have been reduced by 53% in some mills, while cleaners over high speed warpers have eliminated 74% of the transfer stoppage.

Experienced textile engineers will explain how easily American MonoRail equipment can be installed. Write for copy of book describing all the advantages of automatic cleaning. Send card to The American MonoRail Company, 13106 Athens Ave., Cleveland, O.



CHECK THESE RESULTS

Better running work
Fewer gouts or bunches
Less ends-down
Spinners handle more sides
Lower cleaning costs
No lost production
Reduced machine stoppage

AMERICAN MONORAIL OVERHEAD CLEANERS

for Spinning, Winding, Spooling, Warping

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SEP 19 1938

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Published by
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PUBLISHING CO.
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VOL. 102 SEPTEMBER, 1938 NO. 9

COTTON
SERVING THE
Textile Industries

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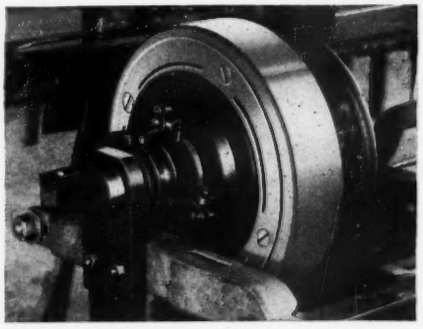
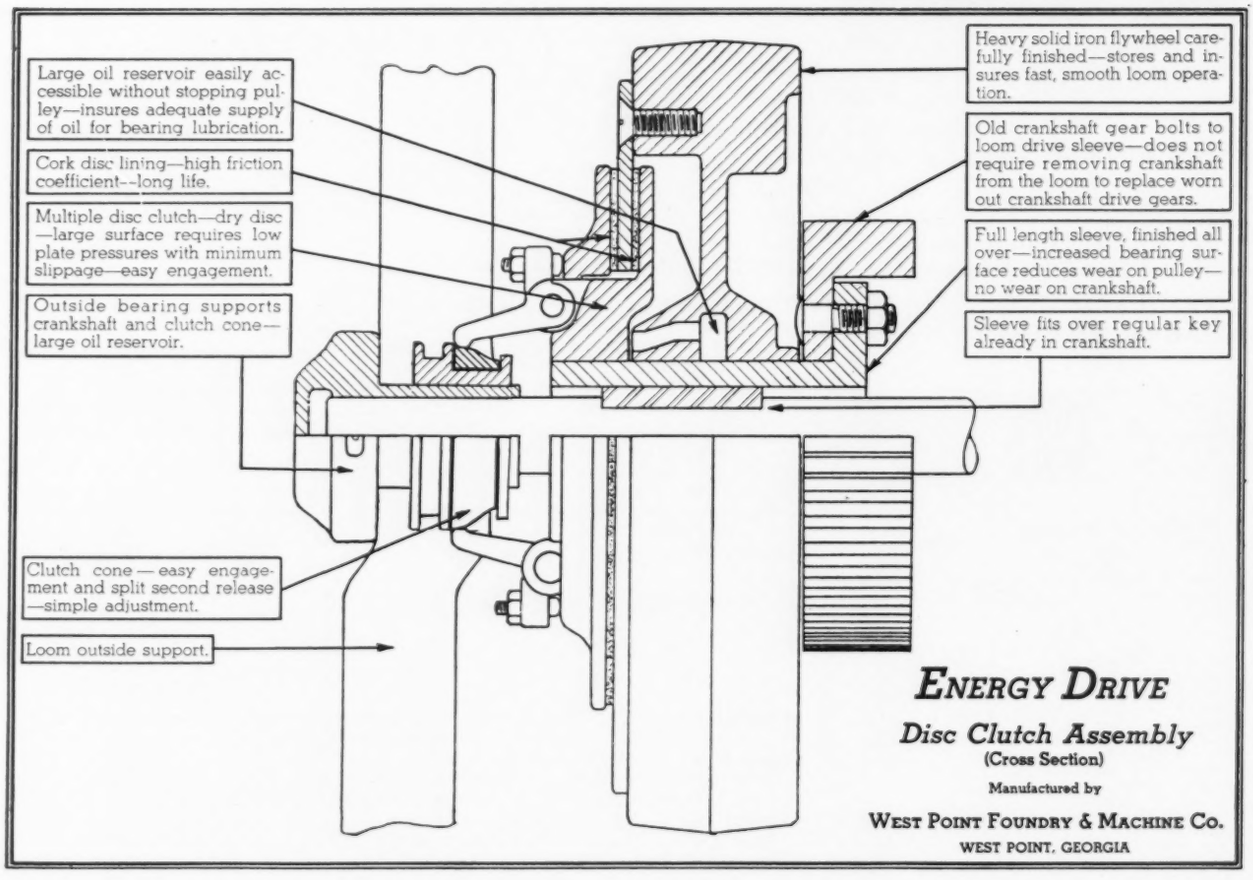
THE WEST POINT ENERGY LOOM DRIVE *IS BUILT RIGHT*




Large oil reservoir easily accessible without stopping pulley—insures adequate supply of oil for bearing lubrication.
Cork disc lining—high friction coefficient—long life.
Multiple disc clutch—dry disc—large surface requires low plate pressures with minimum slippage—easy engagement.
Outside bearing supports crankshaft and clutch cone—large oil reservoir.
Clutch cone—easy engagement and split second release—simple adjustment.
Loom outside support.
Heavy solid iron flywheel carefully finished—stores and insures fast, smooth loom operation.
Old crankshaft gear bolts to loom drive sleeve—does not require removing crankshaft from the loom to replace worn out crankshaft drive gears.
Full length sleeve, finished all over—increased bearing surface reduces wear on pulley—no wear on crankshaft.
Sleeve fits over regular key already in crankshaft.
ENERGY DRIVE
Disc Clutch Assembly
(Cross Section)
Manufactured by
WEST POINT FOUNDRY & MACHINE CO.
WEST POINT, GEORGIA

SMOOTHS OPERATION · INCREASES PRODUCTION · CUTS COSTS

The West Point Energy Loom Drive permits increased loom speed and higher production, and makes Loom operation smoother.

The West Point Energy Loom Drive is simple in operation. The energy flywheel is driven from the line shaft in the usual manner. When the clutch is disengaged, the energy pulley runs loose on the sleeve and the loom is idle. By means of the shipper lever the clutch is engaged and power is transmitted from the energy pulley through the clutch, starting the loom instantly. When a bang-off occurs, the clutch disengages instantly and the loom is quickly stopped.

The West Point Energy Loom Drive is simple, requiring a minimum of attention and maintenance. All bearing surfaces are carefully machined and are provided with ample reservoirs for lubricating oils.

Manufacturers of cloth room and other textile machinery, repair parts, bobbin gears, spur and bevel gears—in iron, steel and brass.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

SHORTS AND REMNANTS

Puzzle Corner

The correct answer to July's puzzle (See p. 41, July issue) is as follows:

```
12) 1089704 ( 90808
    108
    ---
      97
      96
      --
       104
        96
       ---
         8
```

Replies came from eight states and Canada, from textile mill men and salesmen, from all sections of the country. Except for our linotype operator, who saw it before our readers, and solved it, first to send in the answer was P. W. McKee, Geneva Cotton Mills, Geneva, Ala. Fastest time noted was that of S. H. Sherman, Trenton Cotton Mills, Gastonia, N. C., who said it required less than two minutes, and also asked for more. Samuel Hayes, Ciba Co., Charlotte, N. C., said that "anyone who can figure my golf scores can work your puzzles". Arthur French, Hamilton, Ontario, says "Send us a hard one next time."

P. G. Wear, Penick and Ford, Ltd., Atlanta, Ga., was one who asked for "more home work". Suiting action to the word, he submitted two puzzles which we are turning over to you. Both require some thought. One has a little trick in it. Try them out and send us your solution. Still "no prizes but no box tops required."

1. A man has a bunch of apples. To the first person he meets, he gives half his apples plus ½ an apple; to the second person he gives half the remaining apples plus ½ an apple; to the third person he gives half his remaining apples and ½ an apple, which leaves him with no apples. Puzzle—how many apples did he start out with?

2. A bookworm, searching for food comes upon a choice ten volume set of books perched upon a shelf. Being a methodical bookworm he started eating on page 1, volume 1 and ate through the entire set up to and including the back and final page of Vol. 10. If there were 100 pages in each volume, and figuring that the bookworm did not eat the covers, how many pages did he or she consume in this gastronomic journey?

(P. S. "Adult" readers who consider these too easy will get their mental exercise in October issue with our Fortieth Anniversary puzzle.)

◆

Wants to Buy Sheeting

"We are regular subscribers . . . would like the names of concerns from whom we can get 4/4 sheetings in 36", 45", 52" widths.

M. ROSENBERG

Gould and Rosenberg
Boonton, N. J.

(COTTON suggested selling houses, and mills, publishes the letter for any mills who want to follow it up.

COTTON Contributor—Not Typical

MRS. JONES

First feminine pulchritude to grace this page is Mrs. Martha Pittenger Jones, Avondale Mills, Alexander City, Ala., who sent her picture with an editorial contribution. Our editors will judge the contribution, but Mrs. Jones herself rates this page as a COTTON contributor — not typical.

◆

Articles on Rayon

"I should like to have the following articles: (articles on running rayon as outlined in S & R June issue). If it is not possible to send me the above listed articles, I would appreciate your letting me know in what issues they may be found."

R. F. REDDING

Callaway Mills
LaGrange, Ga.

(These articles on rayon appeared in 1937 in the following issues: p. 55, Jan.; p. 89, Feb.; p. 117, Mar.; p. 74, Sept.; p. 57 and 60, Nov.; p. 73 and 88, Dec. Copies of some of these are still available, others would require reprinting. Callaway Mills has several bound files.)

"Please advise if you have any books on viscose, acetate, or rayon staple."

A. L. TAIT

Glenn Mfg. Co.
Lincolnton, N. C.

(The articles above should be of interest to Mr. Tait.)

◆

Fabric Designing

"I have just read the third article by T. O. Ott, Jr., entitled "The Why and Wherefore of Fabric Designing" in the June issue of "Cotton". At the head of the article you say copies of the previous installments will be furnished on request. I seem to have mislaid the earlier issues containing these articles and am very anxious to procure copies. If you would please send them to me at the above address I should appreciate it very much."

DUNBAR CARPENTER

Kendall Mills
Walpole, Mass.

◆

On Large Packages

"We would appreciate tear sheets of articles on Large Packages—Spinning Room and Weaving Room.

A. B. KARASIN

Rep. of Peoples Commissariat
Light Industry, U. S. S. R.
New York, N. Y.

(Reprints free or at slight cost on recent articles such as "Some Advantages of the Large Loom Beam", "Practical Analysis of Large Package Spinning", "Modernization—Wiscassett Mills", "Cooleemee—A Modernized Weaving Mill".)

A Scotch Story

" . . . Your journal is easily the best and no other, either in this country or any other gives the service you give. Here I get the *, the *, and *, . . . I have also read the textile journals of other countries, Germany, Italy, and Brazil when I was there and the * in U. S. A., but they are all much on the same lines. No questions are asked and no discussions take place in those journals. . . . We are not allowed to write as freely as your contributors . . . a case where a supervisor won first prize for an essay on spinning and it was published in the local paper. He was brought before his Directors and reprimanded for giving information on practices in their cotton mill. This is ridiculous as every mill practically has the same machinery . . . Besides the questions and discussions, also the splendid articles, I envy your subscribers in being able to obtain booklets so helpful from advertisers. We are denied here the mentioning of firm names to get such information and I may tell you that if I were in your country I would be devouring some of them which explain the latest appliances for our trade."

A SUBSCRIBER IN SCOTLAND

*Other textile journals.

◆

Page Sherlock Holmes

"I recall seeing in one of the textile trade magazines during the past few months where some Italian had invented something new or was having luck experimenting with some new idea. It interested me at the time, however I have really forgotten just what it was.

"If you can assist me in locating this 'x' information, I assure you it will be greatly appreciated."

O. D. L.

Charlotte, N. C.

◆

"Rah and Hank"

"In your June 1937 issue you had an article on 'Rah and Hank'—A Modern Textile Fable, which you sent me several copies for distribution among newly hired textile school graduates. I wonder if you could send me 50 copies of this article."

J. C. COWAN

V. P., Burlington Mills Corp.
Greensboro, N. C.

(A few copies of the fable of Rah and Hank, the fable of the textile school graduate in the mill) are still available upon request.)

◆

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C. C. BALDWIN, JR.

Woodward, Baldwin & Co.
New York, N. Y.

(Orchids to Georgia-Kincaid on their birthday and on this booklet which contains a great deal of research on previously unpublished material on towels.

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TRUSCON STEEL COMPANY

SEP 19 1938

COTTON
SERVING THE
Textile Industries

September, 1938 Vol. 102 No. 9

It's Up to Mr. Andrews

ANY REMARKS at this time about the application of the Fair Labor Standards Act of 1938 must be purely conjectural, and may be entirely in error because administration is the chief element in it. So much is left to the administration of those who have the authority of interpretation and enforcement that innocence and peace, as read from the act, may become punitive measures and strife.

The application of the Walsh-Healey Act has been of no great inconvenience, and has incurred, generally speaking, no great reputation for unfairness, due to the saneness of its administration.

The NLRB was poorly framed, and its administrators have used every punitive measure in the act itself, and in interpretation of its regulations.

The popularity and efficacy of the Fair Labor Standards Act of 1938 rests largely in the hands of the administrator, Elmer Andrews. Those who know and have contacted him, report Mr. Andrews to be broad-gauged and fair and "desirous of putting the act into effect with as little friction and as little upset to business as possible." If these reports are true, and the new administrator knows and is willing to do those things, permitted by the act, which will produce a minimum of friction and business disturbance, then all parties involved are fortunate.

The act must be administered in fairness to the employers, the employees and the public. This means that every one in the group will have to compromise on some expectations and demands, because individual self-interest will appear in every group in seeking the benefits of the law regardless of the harmful consequences that might result therefrom.

There are many factors involved in the application of this law, and the practical mind has a fund of knowledge and experience that the theoretical mind cannot possess. It is therefore to be hoped that the various committees will be practical and fair—men who can see more broadly than one point of view, who are free from political or economic or regional bias and prejudice.

Public opinion is the strongest asset to law enforcement, and the application of this law must not become so abstract and theoretical that traditions and conditions are so completely disregarded that resentment for the law will demand its annulment in one form or another.

There is a vast difference between permission and demand, and while the new law gives certain permissions, it may not be wise to invoke them now, or, if and when invoked, to use them to the full extent.

The Report on the Economic Conditions of the South could be inclined to prejudice the administrator in the application of the law. The President of the United States has referred to the South as "The Nation's No. 1 Economic Problem". There are other areas and sections which could be lifted into the unpleasant picture that has been drawn of the South. Pennsylvania drew as much WPA funds as the entire 10 southern states. The pictures and descriptions of Harry Ashmore of the "deep North" portrayed worse conditions than can be found in the South.

Political prejudice and economic rivalry must not enter into the application of the law.

As was the case under the original NRA, the textile industry "is the first guinea pig", or, stated differently, "will be the first to have the opportunity of working with the government in the application of this reform"—depending on where you sit. Much was learned, by the government and by the textile industry, in connection with the development and operation of the NRA, which, it is hoped, both will recall in the present instance.

A Mustard Plaster for the South

THERE IS AN OLD STORY of the country doctor who was called upon to extract a tooth for one of his suffering neighbors. The doctor was unable to pull the tooth, so he put a strong mustard plaster on the neighbor's stomach and told him that it would finally burn him so intensely that he would forget about his toothache.

Some people think that the President is somewhat wary about the results of the application of the wage-and-hour law in the South, and so he has put on the South for the nation a mustard plaster labeled "The Report of the National Emergency Council".

All people who know the South, with its traditions and conditions, realize that the application of the Fair Labor Standards Act of 1938 will undoubtedly increase unemployment and cause criticism of its results by both employers and employees. The Administration is crafty in its seeming fairness by stating that no one remedy is a panacea for all of the ills of the area, hence, the quickly-formed National Emergency Council, with apparent good in-

tentions, boldly and dramatically picks out 15 economic ills of the South, and thus by inference shows that if the application of the wages-and-hours law proves disastrous and harmful, it is only because the other 14 things discussed in the report have not been cured.

The implication, therefore, is that the public must ache because of the other 14 factors, and forget the "seeming evils" of the wage-and-hour law.

The report is obviously a bid for more power and patronage to punish a so-called and always Democratic South. Just as the South is the last stronghold for fundamental religion, so it is the last stronghold for real democracy. It is the nucleus for culture and civilization and progressive democracy, regardless of what those who live under the glamour of bigness and destructive idealism may think.

Many criticisms have been made about the American business man and his philosophy of business. The national administration has not seen fit to take up the positive side of the American business man, and present a fair picture of him.

It is interesting to study the personnel of the committee who supposedly formulated the economic report on the South. There is no fault to find with their morals, their intelligence or their character as such things are ordinarily considered. They are liberal—many are biased and were selected largely because they would authenticate the report that was desired from the beginning. It has been thought that the purpose of the report was political and a part of a plan to destroy conservative leaders in the South and alienate the people away from such leadership. It is also reported that the report was prepared and written in Washington by men within the government and submitted to the committee for approval. Is this be true, then this committee of southern citizens is only a front for a political canard.

There is another South far different from the one depicted in this report. It is the real South, struggling out from a provincial state into one of national recognition.

These comments are not a defense or an apology for any adverse social or economic conditions; we are discussing simply the question of fair play and honesty of motives. The South needs help, and wants help, but this help cannot come from sinister motives.

Not all of the ills described in the report can be attributed to the South as emanating from stupid or unwise policies of southern leaders. The national attitude toward the South, sectional attitudes, adverse legislation, and other factors have heaped abuses and disaster upon this section.

The people of the South are, more than any other group, anxious to eliminate its unfavorable conditions, yet they do not want to sell their few remaining rights for bondage and a totalitarian state. They do not want to be political pawns for a glamorous idealist who forgets the rule of the people and inserts his own prestige and power as the only safe course to follow.

In fairness, the report should have showed the strength of the South, as well as its weakness; it should not have been so political and perhaps should have indicated some of the cures. If the cures had been depicted with the same force as the evils, the report might have been more constructive and worthwhile.

A Lesson from a Mailing Tube

THE OTHER DAY we received a chart of some sort sent to us in a paper mailing tube. After removing the contents of the tube, and being in a pensive and reminiscent mood, we held the paper tube up to one eye, as a seaman does a spyglass, and looked about the office. At about ten feet we could see almost all of the face of the office clock, some five inches across. We then looked out into the hall fifteen feet away, and our view through the tube took in every bit of twelve inches. Swinging around in our chair we pointed the paper tube out toward the Exposition Cotton Mills, possibly two miles away but plainly visible, and to our surprise we took in through our "spyglass" the entire mill buildings. Our thoughts began to churn and we raised the tube slightly, and surely enough we could see all of old Kennesaw Mountain, nearly 20 miles away.

We were sitting in the same chair; we were looking through the same opening; yet the farther away we looked the more territory we took in, and the more we learned.

Our mind drifted back to a superintendent of a small, very small, textile mill. The superintendent had been there for over thirty years; both of his overseers (there were only two) had been there for twenty-five years; and this superintendent had used no system for increasing his knowledge and for bringing new ideas to his plant, other than his own experience, all these years. The mill was being run just as it was years ago. This man was not using his "spyglass" to see farther than his own immediate plant. He was wrapped in his own shell and was isolated.

But he has finally realized his need for the ideas and opinions of others. And he is doing something about it.

Just as our paper tube spyglass broadened our view the farther away we looked, so this man is now employing three valuable agencies to act as his "spyglass" in getting new ideas for his plant—all without moving from his chair, or even turning to face the window.

When traveling representatives, experts in their line, call upon him, he gives them an intelligent hearing. He plies them with questions. He asks for advice and service that is cheerfully given.

He sends his men to visit other textile mills. They discuss mutual problems with their host, and both profit by the visit.

He reads his textile manufacturing journals. He finds the advertisements educational, and he finds the articles give him the experience of many other men.

Keeping Cloth Weights

By Alton Dee

DURING recession times, buyers usually find more time to register complaints against fabrics. Let them have a little idle time on their hands and they will discover that the cloth just doesn't weigh right. Keeping weights through the mill is always a problem to the mill man, but in the accompanying article we believe the reader will discover a method that will help him overcome this difficulty. It may require a little practice to become adept on this system, and some alterations to fit individual conditions will be necessary, but this method will provide a starting point from which the reader can devise his own procedure . .

IT IS WELL KNOWN that the weight of a piece of cloth depends on the yarns, the size content, and the moisture. If all three of these remained constant, mill men would play more golf. But, alas, it is also well known that they vary up and down, together or separately, and usually just when it is most inconvenient. The mill man watches his "Worth Street Standard allowance of ¾ of 1 per cent light or 2 per cent heavy per shipment" with one eye, and his "Loss of Weight" report with the other. The more styles he has the more firmly he is convinced that the whole thing is cock-eyed. If he is particularly unfortunate, he has napped goods which have the cute habit of being 10 to 20 points lighter when double napped than when single napped.

Every mill thinks its problems are the world's worst. In our mill we have 7 warp numbers and about 60 styles which are changing constantly. Part of these are napped goods ranging from the heaviest to the lightest types. Our system of regulating weights for several years was in line with methods used by other mills we visited. Briefly it may be described as follows:

1. In the opener room care was taken not to feed in damp or wet cotton. Blending of as large a number of bales as possible was practiced. This blending was improved by the installation of bale-mixing machines.

2. At the risk of being considered old-fashioned, we think single-process picking has done nothing to help weights. We believe the blending on the finisher picker has been greatly missed. However, the single process has other advantages and is now in use in most mills, and we try to forget this disadvantage. Our laps are kept within 1½ pounds of standard with ¾-pound allowance each way. A regain indicator is used with laps corrected for moisture. One disadvantage here is that lap weights cannot be checked on storage laps due to this variable feature. This means picker men must be checked more often and more carefully. Another thing about correcting laps for moisture: we would suggest that anyone check this method for if the correction is wrong it can do more harm than good. To check this we read the indicator and bone-dry cotton from the picker, checking the actual regain against the indicated regain. This test should be made on dry days, wet days, and at night. It is also helpful never to allow stock to remain too long in the picker room. Without some regular routine on this, it is surprising how long laps can be allowed to remain in storage. The same thing is true throughout the mill on roving, yarn, etc.

3. In the card room our practice was to weigh finish drawing sliver from each drawing frame once per shift and change if necessary. We also weighed each hank roving once per shift and changed when necessary. We found this was unsatisfactory as double changing for the same light or heavy streak would occur. Now we weigh up 6 yards from each finish drawing frame as a new back is started up and change only on extreme variation. We also bone-dry the weighing if it appears to be necessary. No changing is now being done on fly frames. Of course, we follow through any different type of cotton and change anywhere that is necessary. A change in cotton will sometimes change the weight in a surprising manner.

4. Spinning room practice was to weigh and break each warp yarn daily. Also, each filling was weighed. No daily sizing was taken from the same frame. Four bobbins were weighed and broken for the average. Changing was done on filling yarns to keep cloth weights in line. Warp yarn weights were never changed.

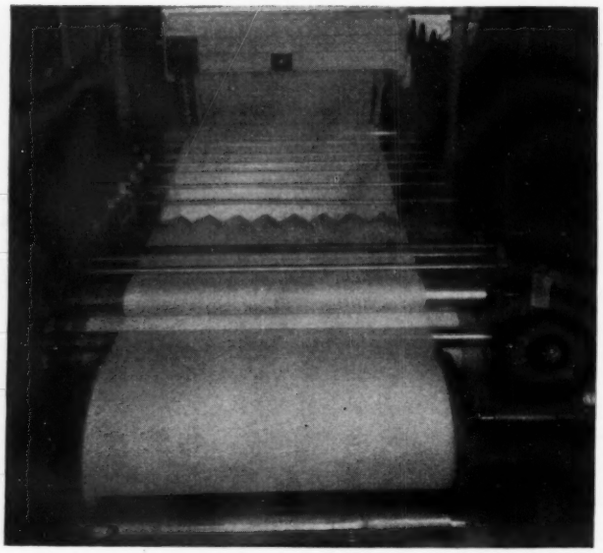
5. On the slashers, we try to be consistent. Mixes are weighed carefully and used fast, requiring about 45 minutes to run out.

In addition to all this we watch our humidity throughout the mill, taking readings at various points, and keeping records of these readings. Humidifiers are run on week-ends when we think it is necessary.

The New System of Keeping Weights

We understand that systems, pretty much like the one we have outlined, work in a number of mills. We used it in our mill for several years and our loss of weights was not excessive. But somehow we had entirely too many styles to show up light. At times cloth had to be stocked back until heavier cloth could be made to mix off with the light. This was particularly objectionable in fabrics with breaking strength requirements, and isn't exactly helpful to the appearance of goods being finished or dyed. When we faced the problem squarely we concluded that at best our system was merely a method for correcting a trouble

after it had occurred; it was not a preventive system. We decided we needed something better, and after six months on our new system we think we have got it. To us it has three attractive features: It is simple. It is inexpensive. It saves money in less loss of weight.



When we tell you about it you may laugh because it is so simple. First, we weighed all section beams as they came to our slasher room. The funny part is we had done this all along. But we went a step farther. We set up a standard weight for each beam with allowances to the light and heavy side. The same thing was done for each set of section beams for each style. Right there we encountered our first real obstacle. The sets varied too much. This variation was not so much beam to beam as they came from the warpers, but the day to day, week to week variation was causing our trouble.

Also at this point we thought of something and actually proved it. *A slasher will apply more size to heavy yarns than to light yarns.* And we realized that these heavy sets were being made heavier, the light sets lighter—thereby increasing our variation. So we went a step farther. We established standard section beams as far as possible on each yarn number. We made up the sets for the slasher as fast as beams came from the warper room instead of waiting until a set ran out. With the standard beams it is possible to swap around and keep the sets nearer standard. Also, we have gone back to changing on warp yarn if the section beam weights show a yarn is too light or too heavy. This has not caused very many changes, but we believe everyone made has saved weight trouble in the cloth.

Records for the System

You may wonder how we keep up with this system. It is simple. We made a wood box in our shop to serve as a file. In this file is a card for each style. The cards are about 7x9 inches, and last about 6 months, using both sides. On the card is listed the date, the daily cloth weight, the set weight of each set put in on the day it is run, and in red is listed the filling change gear.

The box is divided into three parts—Standard, Light and Heavy. The actual entering of information on these cards requires, with our conditions, one hour daily. This work is done by the yarn weigher. He has time for this, as we have reduced the daily weighing and breaking of warp yarn to every other day. Instead of weighing all filling numbers, he only weighs those that are not showing within standard on the cloth weight. Occasionally we have a set that must be run that is too heavy or too light. This card is placed in a separate file, and after weighing up the filling and checking cloth weight from the loom, we sometimes change the filling weight before that set can cause light or heavy cloth.

We do not claim that this system would work in other mills. Some mills may have better systems. We do say that this system is giving us the best results we have ever experienced on cloth weights. We like it, and would be even prouder of it if we could perish this thought: Why didn't we do it years ago?

The foregoing article was written by a southern operating executive in response to a request to COTTON *from an executive in a large eastern mill for information on the subject. This article was sent to the executive prior to publication and he furnished his own method of keeping weights throughout the mill, without going into a discussion on the various elements that contribute towards variation in cloth weights. His system is as follows:*

Another Mill Describes Its Method

In our opening room we have four bales of cotton before each of five feeders and the usual cleaning machinery; such as, bale breakers, vertical openers, and No. 12 lattice cleaners. This opening and cleaning also gives us a very good blending of the stock. We particularly watch for damp or wet cotton in the opening room as well as in the picker room.

In our picker room we have one-process pickers with blending reserves; the laps are kept within one pound of standard weight; that is, we keep within a one-half pound allowance on each side of standard. The extreme variation in yard for yard lap weighings will average approximately one ounce, not taking into consideration the few yards at the beginning and end of the lap.

It is our practice to weigh the drawing sliver from every delivery on our finisher drawing twice a day, once in the forenoon and once in the afternoon. If we find a variation of one-half a grain in the average weight of the sliver for any one head, we lighten or heavy by changing the crown gear. A change of one tooth in our crown gear gives us a change of one-half a grain in the weight of our drawing sliver. A change of one tooth in our draft gear gives us a change of one and one-half grains in the weight of our drawing sliver.

Daily roving sizings are made on all of our finished roving in our laboratory under controlled humidity conditions. We seldom have to make any changes in our roving sizes. Daily yarn sizings are also made in the laboratory.

(Continued on page 63)

"Permanent Finishes" for Textile Fabrics

By J. Andrew Clark

Article 2—The Synthetic Resin and the Alkali-Soluble Cellulose Ether Methods

IN THIS second and concluding installment, Mr. Clark discusses the alkali soluble cellulose ether and synthetic resin types of materials for "permanent finishes", and describes the various methods of their application in a thoroughly practical way.

The previous installment, on page 45 of the July issue, gave a general history of the development of permanent finishes and a discussion of the Heberlein process . .

OF THE various permanent finishes obtained by the deposition of an insoluble material within or on the fibers of the yarns, those secured by applications of the various cellulose solutions as well as of the synthetic resins are very permanent and of most practical and commercial importance. As far back as 1894, English Patent No. 943 was issued to cover the glazing of textile fabrics by an application of a cellulose solution. In this case the cloth was treated with a cellulose-zinc chloride solution, after which the zinc chloride was removed to leave a glazed coating of cellulose, more or less permanent in nature.

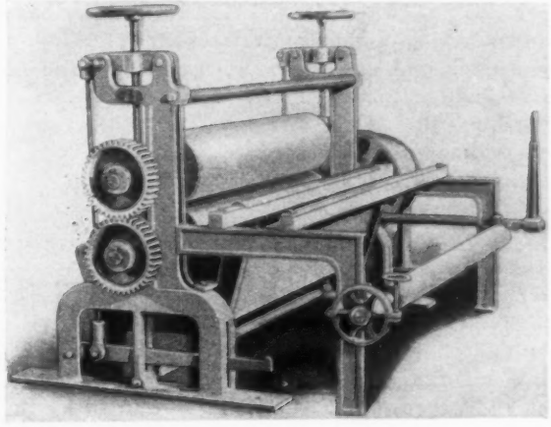
The use of viscose solutions likewise has been employed commercially from time to time during the last 20 years. This, however, has been more or less confined to a very limited number of fabrics, such as high grade table damask, and certain sheer goods. With suitable equipment, viscose may be applied pure with a pad. After impregnation, the viscose requires a coagulation treatment which regenerates the cellulose in place and renders it insoluble. This is generally most conveniently accomplished by passage into dilute sulphuric acid, although this causes at the same time the liberation of several sulphur compounds, among which is the most disagreeable and offensive smelling hydrogen sulphide. The simultaneous liberation of free sulphur often necessitates treatment with sodium sulphite for its removal.

Differences in concentration of the solution, and differences in constructions, permit various finishes to be obtained. Softeners can be added when tinting, the effect of which is retained after laundering to a reasonable extent. Solutions of from 2 to 8 per cent cellulose content may be used.

Unless considerable volume of cloth is regularly treated with viscose it hardly pays to manufacture the solution, particularly since other types of solutions are available at low cost and as easily applied.

While the use of viscose is fairly satisfactory, it is attended not only by disagreeable working conditions, but by the hazard of the relative instability of the material. In addition, viscose finishes suffer from the fact that all of the regenerated celluloses have a high degree of extension when soaked in water, resulting in a soft surface during laundering that is easily abraded at this time.

Treatment with cellulose dissolved in ammonium copper oxide eliminates many of the difficulties in operation characteristic of the viscose method. After application, for instance the cellulose can be coagulated by volatilization of the ammonia from the cloth in a hot frame, following which souring is used to remove the precipitated copper compounds, or the treated cloth can be passed directly into a dilute caustic soda bath, followed by souring and final washing. While considerably more agreeable in operation, this process is also rather expensive, especially since small plants cannot as a rule afford to recover the copper and ammonia for re-use, nor salvage them for sale.



Courtesy, H. W. Butterworth & Sons Co.

Pad with positive gear drives, used in viscose application to prevent slippage at nip . .

One solution is prepared by dissolving the cellulose in minimum amounts of ammonia and copper hydroxide, which requires about an hour. While this amount of ammonia is required to put the cellulose into solution, it is more than enough to keep it in solution. This excess ammonia is now removed by a vacuum, while stirring, after which the solution can be diluted to the desired strength for application. Coagulation takes place in 5 per cent caustic soda solution. It is said that there are some hazards to this, resulting in cloth damage unless the most

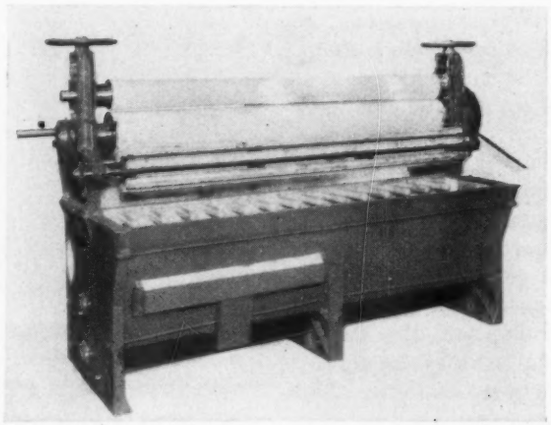
rigid technical control and supervision is employed.

While the technical difficulties in manufacturing and applying both the viscose and cupro-ammonium solutions, as well as their high cost, retarded their general adoption, lack of public demand and interest probably did not justify more active promotional efforts on the finished fabrics.

Various investigators, in seeking to improve the wet strength of regenerated cellulose, eventually discovered products with superior physical characteristics, especially in respect to the degree of extension when wet. These products are said not to swell as much when wet and consequently are stronger and resist the abrasion in laundering much better than the older products. The cellulose ethers are the outstanding products of this type and date back to their discovery in 1912. Three general types of this material are recognized, i.e., *water soluble, alkali soluble,* and *organic solvent soluble.* The *water soluble* type has been recommended extensively as a thickener for printing pastes and other uses, but as the final finish is not permanent, this ether will not be discussed further. The other two types, however, are capable of giving good laundry resisting finishes and are now applied on a variety of fabrics. Of the two, the *alkali soluble* type seems to have possibilities of the widest and least expensive applications.

The Alkali-Soluble Cellulose Ethers

The cellulose ethers of the alkali-soluble type apparently originated with the original Lilienfeld English Patent 12,854,—1912. This patent describes the treatment of cellulosic material with esters of inorganic acids and basic substances, mentioning alkyl halides and sulphuric esters. Since that time, numerous other patents have been granted. Lilienfeld and others, covering a variety of preparations. The methyl, ethyl and glycol ethers are made commercially; the two latter can be prepared as water, alkali, or organic solvent soluble, according to the degree of etherification. For instance, ethyl cellulose, containing 5 per cent ethoxyl is soluble in 10 per cent caustic soda on freezing; increased to 27 per cent the product is water soluble, while a further increase of ethoxyl to 47 per cent makes the ether organic solvent soluble.



Courtesy, H. W. Butterworth & Sons Co.

Rope washer used in viscose process to remove acid from the cloth . . . . .

Bolton (U. S. Patent 2,087,237—1937) describes the preparation of an alkali-soluble cellulose ether of glycollic acid as follows:

"In an excess of 20 per cent sodium hydroxide solution, one molar weight (162 parts) or oven dried cellulose (spruce sulphite pulp) in the form of sheet is steeped for 2 hours at 28 degrees C. This is pressed out until its weight is 3 times that of the starting cellulose. The sheets are shredded or torn to crumbs in a shredder of suitable type at a temperature not exceeding 25 degrees C. for 2 hours. The alkali-cellulose so prepared is allowed to age or ripen in a covered can for 24 hours at 28 degrees C. before reacting upon it with a solution of .6 mol. (70 parts) of sodium chloracetate in a little water. Such a solution is conveniently prepared by dissolving 56.5 parts of chlor-acetic acid in 61 parts of soda ash and neutralizing this with 50 parts of sodium bicarbonate. This reaction can best be carried out in an apparatus of the mixer or shredder type, equipped with a means for circulating warm and cold water through the jacket of the mixer. The sodium chloracetate is kneaded in, and then the shredder is sealed air tight and the contents warmed to 40 degrees-42 degrees C., at which temperature it is maintained for 24 hours.

"The product which resembles the original alkali-cellulose in appearance, is dispersed in 1836 parts of 6 per cent NaOH, in which at room temperature it makes only an imperfect (fibrous) solution, but which solution after being cooled to —6 to —10 degrees C. and being again warmed to room temperature is a beautiful, clear and transparent colorless or pale straw colored liquid of moderate viscosity similar to spinning viscose."

The alkali soluble ethers resemble in appearance the cellulose source from which they are manufactured, even under the microscope, but on cooling a suspension of this in caustic soda solution of from 6 to 10 per cent the ether dissolves to a clear viscous solution. The temperature at which solution takes place varies with the type of ether, and although an ether can be made to dissolve at room temperature, the ones most suited to textile applications require cooling from —5 to —10 degrees C.

The characteristics of these ethers can be made to vary greatly in manufacture, not only by differences in chemical structure, but also by selection of raw cellulosic material, and its degree of degradation. Thus ethers can be prepared to have a high or a low viscosity with a given solubility temperature or ethers of a given viscosity can be prepared to have different solubility temperatures.

Even though cooling is required for solution, the ethers remain soluble on warming to room temperature. In fact, the solution may be warmed cautiously to 150 degrees F., at which temperature the viscosity of the solution will have been greatly reduced. Temperatures above this cause the gradual coagulation of the ether to form cellulosic clots.

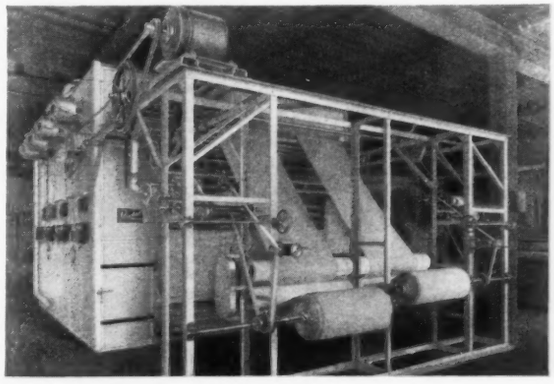
When applied to cloth, coagulation may be effected first by heating on cans or in a hot frame;

second, by passing into acid, and, third, by running directly into caustic of mercerizing strength. The method selected depends in some measure on the results desired.

The solutions as generally used run from 2 to 8 per cent of ether, dissolved in caustic of from 5 to 10 per cent, and are thick, viscous and clear. The viscosity depends both on the type of ether as well as on the concentration, and unlike viscose these solutions are stable for a reasonably long time.

Standard Finishing Methods Used

The ether may be applied by practically any of the standard methods of finishing, by a mangle, backfiller, friction mangle, or scim mangle with only slight modifications. Finishing solutions of the ethers are decidedly slippery, enough so that this must be guarded against in most cases by arranging positive drives for each bowl of the mangle. Owing to the high caustic content, brass and copper fittings and bowls should be avoided to prevent staining the cloth and pitting the metal.



Courtesy, Proctor & Schwartz, Inc.

Delivery end of double-strand dryer batching from rolls; used for "curing" or "heat-treating"

The method of application follows closely the methods used when starch mixes are used, except that following impregnation, some type of coagulation is necessary to convert the ether to its insoluble condition. With mangle finishes the cloth may be batched after the mangle operation and then coagulated by passing into 5 per cent sulphuric acid, or if desired these may be run in range.

Another method of coagulation is based on the insolubility of the ether in strong caustic, which permits cloth impregnated with an ether solution to be mercerized directly after padding. This method gives very good results with light weight goods such as lawns and voiles.

The ethers are capable of holding considerable amounts of mineral fillers without dusting, while the retention after laundering is remarkable. One example of a rather heavily filled export sheeting showed only a 2 per cent loss after laundering. With work of this type the higher viscosity ethers are most suited, and after backfilling, the cloth may be acid coagulated observing the usual precaution against plucking out, before coagulation.

The excellent resistance of the cellulose ethers to chemical action permits these to be applied to some fabrics in the grey, and after coagulation of the ether the cloth may be kier boiled and bleached as usual. In application of this kind due allowance must be made for the reduced absorbency of the grey as compared to that of bleached goods. In fact, the ethers can be applied at any point in the bleaching operation, and on wet or dried goods as convenience or cost requires. Of course, when padding wet goods, the concentration needs to be increased, to obtain an equivalent saturation.

The fabric treated with a cellulose ether may be tinted and softened with the usual materials, although these must be applied separately in the final operations. In special cases an appropriate tint may be added directly to the caustic solution. When, on the other hand, stiff finishes are desired, these have been obtained by omitting any softeners. Suitable constructions have shown as much as 65 per cent retention of this property, after 20 launderings.

Cloth finished with these ethers acquires a smooth, lustrous, linen-like feel and appearance, which it retains after repeated launderings. The retention of these properties, for instance, with wide sheeting, is especially good after as many as 20 commercial launderings. In some constructions a gain in tensile strength is obtained. Applications on cotton yarns have shown gains of 20 per cent in this value. The shrinkage of ether treated fabrics has been found in most all cases to have values of approximately one half that of the same cloth finished in the normal manner, in some cases permitting the cloth to be classed as preshrunk. These finishes lend themselves well to calendering, and especially nice results have been obtained in the heavier fabrics.

The following is a suitable treatment for dress sheetings, which, if for colors, should be previously dyed with dyes capable of withstanding the action of the 6 to 10 caustic soda:

Pad dip and nip with a 3 to 4 per cent solution of ether, batch up open width, and sour in 5 per cent sulphuric acid. When operating continuously this may be done on a vat range with omission of the batching.

After washing, the goods are water-mangled, run in a softener bath, and dried on the cans, following which they are finished and short-framed to width.

Lawns intended for printing can be handled somewhat differently, in that mercerization of the cloth can also be utilized to coagulate the ether. In this case, the kier-boiled lawn is washed after souring and dried prior to padding with a 5 per cent solution of a medium viscosity ether, through the nip only to minimize the danger of fraying the cloth. If in range, the goods can then be run directly into the caustic saturation box of the mercerizing range. Tension and washing is applied as usual, following which the goods are bleached in the regular manner. As with starch finishes, a swing framing is required to obtain the characteristic elastic finish of the lawn.

The *organic solvent soluble* ethers have not played as an important part in the production of permanent finishes as the alkali-soluble type. The

high cost of the material itself and that of the organic solvents interfered with its use for anything except novelties.

Ethyl cellulose prepared by the action of ethyl chloride on alkali cellulose is one type of ether in this class. It is a white granular material which melts about 200 degrees C., but which starts to soften at a much lower temperature. The material is resistant to dilute acids and alkalies in any concentration, as well as to dilute hypochlorites used in bleaching. This ether is soluble in a variety of organic solvents as well as in most oils and waxes.

When used for finishing cloth it is generally applied as a solution in organic solvents or in the form of an emulsion. The following was one formula suggested for such a solution:

1. *Organic solvent solution*

Ethyl Cellulose	13.3%
Toluol	70.0%
Butanol	16.7%
	100.0%

2. *Water Phase*

Duponol ME	0.5%
Sulfonated Castor Oil	1.0%
Water	98.5%
	100.0%

Emulsions can then be prepared by suitable mixing of 1.25 parts of the organic solution to 1 part of water solution to give an ether concentration of 7.37 per cent. These emulsions are applied with a pad and dried in a frame which should be provided with means for good ventilation, and if long runs are contemplated solvent recovery might be attractive, although too expensive to install for most small plants. The use of solvents, moreover, may introduce additional occupational and fire hazards.

The product itself produces stiff effects which, however, can be plasticized by most of the commercial plasticizers to yield flexible and soft finishes.

Synthetic Resins for Permanent Finishes

The use of synthetic resins for finishing textiles in this country originated with the introduction in 1926 of the Tootal, Broadhurst and Lee process (U. S. Patent 1,734,516) covering the production of crease-resisting finishes. While several independent workers claimed to have accomplished the same results, the process of this concern seems to have received more publicity, especially in America. Strictly speaking, these finishes are not crease nor crush-proof, and fabrics finished with them do wrinkle in wear, but after wear, the wrinkles or creases flatten out and quickly disappear; thus a garment can be packed in a bag for traveling and after hanging a short time will be presentable. The production of this effect has been carefully studied and has been found to be due to the production of elastic and resilient properties of the fiber. Thus the cotton fibers have acquired the property of recovering their original shape after being bent or pressed. This property varies with the cloth construction, yarn, and amount of deformation as well as to whether the resin is within or on the outside of the fiber.

While the number of synthetic resins would seem to be unlimited, only a very few are suitable because of color and application limitations. The urea-formaldehyde type is used for the most part while recent patents have been granted for the use of the vinyl and other resins. Urea reacts with formaldehyde solution to form water soluble mono and dimethylol urea. At this stage the reaction is one of addition only, but by the addition of heat a further reaction occurs by the combination of two molecules of either to give a coloidal solution, i.e.—containing dispersed resin. The addition of an acid catalyst, or increasing the time or temperature of heating causes the further polymerization of the resin to the hard insoluble form. This resin can thus be prepared in the A, B, or C state although only the first two are suitable for finishing cloth.

Entirely different effects are obtained in the use of the A and B stages of this resin. The most satisfactory crease-proofing is said to be obtained with the A stage, which by tests can be shown to be fixed within the fiber. Resins of the B type, however, have more of a tendency to coat the fibers. When applied within the fiber, the cloth is not materially stiffened, but does acquire a thickened and somewhat sandy feel, whereas when applied on the surface the resin does cause a pronounced stiffening. The process has been quite expensive inasmuch as 10-15 per cent of resin on the weight of the goods is required to produce satisfactory results. In most cases this finish is applied only at a slight sacrifice in tensile strength, due undoubtedly to the high temperature of ageing in the presence of small amounts of acid catalysts. In addition, the fabric seems to be somewhat brittle as a result of the treatment.

Combed voiles, dress seersuckers and sheetings intended for necktie linings have been satisfactory with this treatment, and while suitings and other heavy constructions can be treated, the high cost of the treatment has prevented general adoption for these lines.

Wool-like finishes are approximated on dress sheetings with smaller amounts of resins. Other resins have been proposed to produce a fabric capable of receiving a permanent embossing. The I. G. is said to be employing a water soluble resin obtained by the condensation of acetone and formaldehyde, which becomes insoluble with heat and alkali.

The resins for crush-proofing are applied on the mangle and dried on a hot frame or a hot air dryer of the loop or similar type. Following this, the cloth must be heated or aged to a higher temperature to completely polymerize the resin. This can be done in a loop or other drier fitted to give the required high temperature of 270 to 290 degrees F., 3 to 5 minutes. Following this, the cloth is given a light soaping to remove water soluble salts and excess surface resin.

Printing or dyeing should be done prior to the resin treatment since any slight irregularity in the amount of resin applied might not effect the hand but would effect the evenness of the printing or dyeing.

This installment concludes the two-part discussion on permanent finishes by Mr. Clark.—The Editors.

The Suggestion Box in the Mill

How a Carolina Plant Finds the Idea, Intelligently Used, to be a Sound Phase of Industrial Relations

ON A RECENT VISIT to a Carolina mill, we encountered a new and unusually effective use of the idea of a suggestion box for encouraging the employees to submit suggestions to the management. The idea of a suggestion box is not new; many mills have tried it in different ways, but a large number have abandoned the idea after a more or less indifferent trial. Usually the reason for giving up the plan is that the employees did not respond sufficiently, and, of course, a system that does not bring results is worse than no system at all.

At the same time, practically everyone will agree that ideas from the man on the job are extremely worthwhile, and in any mill there are many instances of improved conditions, savings in cost, decreased waste, etc., which have resulted directly from suggestions offered to the management by employees. And it cannot be disputed that any progressive superintendent or manager welcomes constructive ideas from any source. The difficulty in many instances has been one entirely of the procedure.

In some cases, employees did not submit suggestions because the management failed to consider them; in others—a small minority, we hope—suggestions would be adopted with absolutely no recognition of the worker who made them; in other cases, perhaps the plan and purpose of the program was not adequately interpreted to the employees. But by far the most general cause for a lack of response, in many systems, is that no consideration would be given anonymous communications, with the result, no doubt, that many a good idea died aborning because of a reluctance on the part of the employee, through an inferiority complex, timidity, or other cause, to sign his name to a suggestion and thus, possibly, "stick his neck out", even though his suggestion might be an entirely constructive and valuable one.

It was therefore especially interesting to find at the southern mill referred to a system in use which the general manager said overcame all objections he had encountered with previous suggestion box methods and was doing an unusually good and effective job for the mill.

The system includes five outstanding features:

1. **The Cabinet.** This is an attractive, green metal cabinet, 28x14 inches—similar to the one shown in the illustration—which contains a receptacle for the suggestion blanks, a locked container for suggestions submitted by the employees, and a glass cup-board with hinged frame to hold them.

2. **Thought-directing messages.** These messages, printed attractively in three and four colors, are supplied with the cabinets; there are 52 messages with each cabinet, and these are changed weekly. They are designed to induce employees to think and make suggestions.

3. **Numbered suggestion blanks.** The suggestion blanks provided carry a detachable, numbered stub, affording the workers a means of submitting suggestions anonymously. These numbered blanks are placed in the cabinet and are accessible to all employees, who may write suggestions on the blank, retaining the numbered stub, and put the suggestion carrying a duplicate number in the locked container. Employees are thus guaranteed that their suggestions will be considered and passed on before it is known who made the suggestion.

4. **Reply tickets.** After the suggestion committee has considered the suggestions, the numbers of the suggestions are posted on the cabinet, and employees are requested to see the person in charge of the system to learn what action has been taken on their suggestions. This mill has established a series of regular awards for suggestions accepted, and the prize-winning numbers are posted, and the proper employees may present their stubs for the awards. But here again the control of identity is provided, if desired in any case.

5. **Employee manuals** are distributed among the employees to familiarize them with the system and to show them how and why they should co-operate, and occasional bulletins are issued to stimulate thinking and suggestions.

This mill manager is thoroughly pleased with the results of the system. Occasionally, of course, he gets a "sour" note, some radical or extreme or ridiculous comment—but even these may serve a purpose in "letting off steam". But on the whole, he says, the employees do respond with intelligent, constructive suggestions, some of which won't work of course, but many of which are usable as means of greater efficiency, sanitation, comfort, and convenience, and of reducing accidents, breakage, waste, seconds and cost.

Information from other mills as to experiences with such problems will be welcomed for publication.

The Textile Industry of Brazil

By F. Gordon Cobb

Market Counselor of "Cotton (Serving the Textile Industries)"

• *On page 47 of the August issue, we presented the first installment of Mr. Cobb's report on his recent trip to Brazil, in company with his son, Joe C. Cobb, to investigate the possibilities as to the erection of a yarn mill in Sao Paulo, one of the Brazilian states. That installment told of some of the mills that Messrs. Cobb visited, describing the manufacturing conditions and practices they encountered, and began a discussion of cotton growing in Brazil, a subject of world-wide interest at this time. Below, in the second installment, Mr. Cobb continues his discussion of cotton growing down there, and also tells us of what he saw in some of the other mills which he and Joe visited in Brazil.*—THE EDITORS.

Article Two

MOST OF THE LABOR for cotton cultivation in Brazil is recruited from coffee-plantation labor, many of whom find it more profitable to rent land and become independent growers of cotton and a few food crops for their own use than being subordinate to a frazenda (large land owner).

The cotton land usually costs about $12.50 for six acres, and a fazenda rents the land for about $11.00 for six acres. In some localities, however, the value of land is more than double these amounts.

The next most important source of labor is the Japanese, who have entered Sao Paulo in recent years in large numbers by special arrangement between the Japanese and Sao Paulo governments. These Japanese had been originally contracted for by coffee plantation owners prior to their departure from Japan and conditionally upon each immigrant serving two years on the plantations. After this two-year period, the Japanese are allowed to buy or rent land for themselves. The Japanese cotton fields are usually in excellent condition; in fact, the fields in Sao Paulo generally are clearer of weeds and grass than the cotton fields of the United States.

Cotton Growing and Ginning

Most of the land, however, is still held by large land owners, many of whom employ their own labor and also have share tenants as we know them. Rents are gradually increasing on account of a demand for cotton land. Most arrangements between an owner and a tenant are on a fifty-fifty basis, and the owner usually finances the tenant until the crop is picked. The land owner usually owns his own ginnery, and the cotton is ginned and sold at the gin to the owner who usually pays a fixed price based on the price of Sao Paulo exchange, but which allows a margin to the owner to cover the baling, ginning, freight and other expenses incidental to getting the cotton to market.

Some of the gins are equipped with compresses, and there is much complaint concerning the excessive pressure that many of these compresses use, which, it is claimed, damages the cotton considerably. The advantage of the compress, of course, is from a shipping space standpoint.

In the state of Sao Paulo alone, there are practically 1,000,000 spindles, consuming about 30,000,000 kilos (2 2/10 pounds per kilo). This leaves a surplus to be exported, based on the 1930 crop, of almost a million bales. There are about 40,000 operatives engaged in the mill industry, and the counts spun range from 1s to 100s, the average being about 20s. Several mills are experimenting with rayon, and a small quantity of fine yarns is being imported for weaving. The production of yarns from 70s to 100s has not amounted to much volume yet, and therefore there is a large margin of profit in the production of these finer yarns.

Photographs from "Cotton Progress in Brazil", published by International Federation of Master Cotton Spinners' & Manufacturers' Associations—N. S. Pearse, General Secretary—Manchester, England, in 1937, as Mr. Pearse's report on a visit to the cotton belts of Brazil . . . . . .

Government Control of Seed and Ginning

The local authorities claim that the temperature in Sao Paulo very seldom falls below freezing; in fact, they claim that even severe frosts come only once in 15 years. All vegetation grows the whole year around, even in the winter months. The autumn months are usually dry, and the spring and summer (from September to February) are the rainy months. This is, therefore, the planting period for cotton.

Let me stress the fact that on every hand we see the effects of the wonderful

work the government is doing for increasing the pedigree seed produced by breeding farms and in distributing these seed to well known and reliable farmers who apply for control under the co-operative schemes; these farms are supervised by government inspectors through all agricultural work in connection with planting, cultivation, picking and ginning. Sixty per cent of the seed so introduced is returned to the planter, and the remainder is retained by the government for distribution to other farmers.

The government also has intensive seed disinfecting plants established in various cotton districts of the state. In addition to these co-operative plans, the government is taking control of the gins and the presses, and small gins are being merged into larger concerns on which the government looks with favor as this plan eliminates much of the cost of supervision.

This photograph and the one on the preceding page show natives hauling cotton to gin in Brazil . . . . . .

It is at the gins where most of the damage is done to the lint, and where most of the objectionable mixing of cotton takes place. Gins are not allowed to sell cotton seed to farms for planting. Anderson, Clayton Company has erected several modern gins in 8 or 10 prominent cotton growing sections, and in these gins, great care is taken that the lint of one variety is not mixed with that of another.

Each gin must be equipped with an approved cotton bale store and also a seed store, the latter to be erected to prevent deterioration and infestation. New gins must install automatic feeders and cleaners. The gin owner is compelled to keep his saws in good condition, properly sharpened, with a supply of duplicate saws. In order to prevent damage to staple, the law requires that the gin saws must not be speeded faster than 350 or 450 r.p.m., except in the case of American gins designed especially for higher speeds; even then the government authorities may specify the speed of the saws.

There are numerous other laws governing the ginning of cotton, selling of seed, etc., but I believe I have described enough to show the reader how strict and how efficient the government is in this work, which is bound to show much progress in the production of cotton in the near future. I am mentioning these facts to show what I believe is an inevitable tendency toward the future of cotton growing.

Several of the large cotton firms in Brazil informed me that 90 per cent of their exports are to Europe; that is, Great Britain, Italy, France, Germany, Spain and Holland. This is a business which at one time belonged to the farmer in the United States, and although I admit frankly that I do not know enough about world conditions to give my predictions any authority, it does look to me as though South America is going to progress in the production of cotton to the point where it can supply the cotton requirements of the rest of the world, excepting the United States mills.

With Brazilian cheap labor, good soil, and a season especially adapted to the growth of cotton, and the efficient and progressive way the government is handling the improvement of the cotton—compared to the ever-increasing cost of production in the United States—it seems inevitable to me that the cotton export business from the United States will soon be a minor factor.

Of course, I believe the United States will always produce cotton for its own mills, providing its tariff wall will protect its cotton farmers, and that the wall be sufficiently high to prevent cotton of lower production costs from foreign countries climbing over. This is simply a layman's prediction.

Let's Visit Another Brazilian Mill

But let's get back to the mill. Up bright and early one morning, we were given this address: Glossop & Cia Rau Candelaria esq de Rua Theflulo Oltoni, which is simply the name of a large mill supply house down there that sells equipment and supplies to the mills. On a wall I noticed a chart with readings of high and low temperatures and relative humidity, alongside a hygrometer. This was interesting, because I noticed that the relative humidity, up to 9:00 o'clock some mornings, was up as high as 80 and 85 per cent. However, this relative humidity is based on a temperature of not over 65 degrees F., and having remembered that the mill we had visited was not equipped with humidifiers, I began to see the reason.

I noticed several bobbins of yarn lying on a desk, and upon examination found that the yarn carried about the same elasticity you would expect to find in the United States. My first thought was: will this yarn that has been lying here in the office, although in a relative humidity much higher than in the United States, take up still more moisture and thereby gain in elasticity? I immersed a bobbin in a glass of water for about 10 or 15 seconds, took it out and shook off the surplus water, and found that the elasticity had increased practically 100 per cent. That is, the stretch in a yard of this yarn, after being immersed in water, was practically double what it was before immersion. It was hard for me to un-

derstand why such a fine mill as we saw the first day was not equipped with humidifiers.

The manager of the supply house assigned a couple of English-speaking guides for us and early the next morning we drove, in a small car, about 200 miles into the interior. We traversed a beautiful, wide cement road for a while, then went onto a curved mountain road. We were impressed on every side by the neatness and cleanliness of the country and its people. Among natives who were on gangs of road workers we did not see one really ragged, dirty person.

As we left the main road, and descended into the valley, we approached our objective. About a mile away we saw a group of beautiful white buildings and were told that was the mill and village. Let me explain here that the mills in and around the cities do not have large villages; some of them have houses for their foremen and some have a few of what might

A typical Brazilian gin at Pernambuco . . .

be termed apartment houses for operatives. However, the mills in the interior have villages for their operatives as well as for their foremen.

This mill building was of saw-tooth construction, with tile roof. The roof was dark red which, with the spotlessly white walls of the building, made a beautiful sight. All of the other buildings were also spotlessly white, with red tile roofs. As we entered the grounds, we saw workmen with road machines pulled by oxen, working on a large athletic field; we also saw a large swimming pool and playground.

The owner of this plant is a native Portuguese, but speaks very good English. His brother is the manager. The plant, with 5,000 spindles, is equipped with new American-made machinery. It was on medium counts (about 30s) taking the roving from the slubber to the spinning frame. It was in this mill that we first saw blacks and whites, browns and yellows, working together.

The three slubbers were being operated by a black woman and her son. The spinning frames, 420 spindles each, were being run by help that had been at work only a few weeks; they were green help and were on only two sides. The spinning was running nicely and the room was very clean.

We passed on to the weaving, but in going through the slasher room, noticed that the drawing-in racks all had two operatives, one to draw the threads through the harness, and the other at the back to hand the thread in. Naturally, we couldn't quite understand why they did not use a piece of card clothing to hold the warp ends, as we do in the States, and thereby eliminate one operative.

The weaving was running moderately well. The looms were English over-pick or bat wing motion, with no stop motion. Most of the operatives were on four looms. I felt of the warp, and the Englishman with us noticed that I was a little surprised at the warp being sized so lightly, and explained that this mill bleached its own goods and therefore was using as small an amount of starch as possible. In my opinion, this plant could well afford to use more starch on the warp and gain more in weaving efficiency than the starch would cost.

We were next shown through the finishing department, and through a waste plant making a very low grade of blankets to sell to natives; in fact, my understanding was that they were making these blankets for use as "loss leaders" in stores, as well.

Mill Built in Brazil in 1886

Our next visit was to a mill in the city. On the main building was this sign: Fabrica D Fiaco E Tecidos, 1886. So you see, the textile industry in Brazil dates back pretty well. This plant had 4,000 operatives on its pay roll; it was being dismantled and moved to the interior. We were told that the real estate could be disposed of at very high prices which would more than pay for the cost of dismantling and moving the machinery.

In this mill we saw the first automatic looms we had seen in Brazil. The plant was badly disorganized on account of being moved, and there were departments that had only about one-fourth to one-half of the machinery running. Our guide from the supply house had entree to this mill without meeting any of the executives; therefore, we did not get any definite information as to machine assignments, rates of pay, etc., although, we of course would have liked to have that data.

We visited several other mills, but aside from an apparent difference in the intelligence of the operatives, nothing comes to mind about these mills that I have not described before. All of the mills in Rio, of course, have English machinery, with three and four processes of roving. The spinning is all four-roll long draft, and some of them have a few frames on 60s to 100s, but most of the numbers are from 60s down to 30s.

Our next visit was to the largest plant we saw in Rio. I will not give names, because this magazine is read in South America and I would not want to be accused of unjust criticism. However, we have seen very little to criticize. But we did see combers tak-

ing out from 18 to 40 per cent, according to the numbers made; and allowing for variation in staple, I can't help but believe some of this wide variation was due to management.

We also saw some of the long staple cotton that seemed to have an abundance of nits, while other long staple cotton did not have them. We also saw cotton without many nits, but with an abundance of nits in the card web; most of this, I believe, is caused by the preparatory or opening and cleaning machinery. I do know that I have had the experience of opening machinery curling the cotton, even with the 1 1/16-inch cotton we use in the States, and as their cotton goes up to 1⅜-inch, my supposition is that you have got to watch your opening machinery.

Three of the grades or kinds of cotton are classified as follows: The 1-inch is Paulista; the 1¼-inch is Sertao; the 1⅜-inch is Serido. The long staple cotton has a slightly creamy color, very little leaf or other foreign matter, and is as strong as the long staple cotton in the states, but I hardly believe it has quite as much elasticity. This cotton, as explained before, grows on trees in northern Brazil. A tree will produce up to 25 yearly crops. The cotton does carry an excessive amount (as compared with long staple in the States) of small balls or bunches of fiber which are knocked out at the pickers.

If the average American mill man were to look at the waste under the pickers and see all of that white cotton, he would throw up his hands in horror. One mill manager told me that he gets about 30 per cent of spinnable cotton out of this waste. There is also a good market for all kinds of white waste and card strips.

In one of the mills in Rio de Janeiro we saw what I believe is the finest spinning on fine numbers I have seen anywhere. The frames are new Platt machines and might be termed two-in-one. That is, there are two frames butted together which take up the whole width of the building. There is a variable speed motor on each end of the frame, and the drafting rolls, traverse and frame cylinders are driven separately by these two motors. However, the creel and other parts of the two frames are one; that is, there is only one creel reaching from the end of one frame on across the butt end of the frames to the head end of the adjoining frame. You can imagine that this makes not only a beautiful installation, but a condensed number of spindles in the spinner's alley as well. We saw 120s running nicely on these frames.

(In the next and final installment, to appear in an early issue, Mr. Cobb will describe a mill he and Joe visited in Sao Paulo. All of the plants so far described have been in or near Rio de Janeiro. He will tell also of some of his experiences in laying out a mill down there, and conclude with his observations as to the prospects of textile manufacturing in Brazil.—The Editors.)

Second Quarter Rayon Yarn Output Smallest Since 1934

Production of rayon yarns by United States mills for the June quarter was the smallest for any three-month period since 1934, states the current issue of the *Rayon Organon*, published by the Textile Economics Bureau, Inc. With the currently indicated resumption of demand, however, it is expected that third quarter production will show a substantial increase over the low second-quarter figure. Rayon yarn production for the June quarter amounted to 53,300,000 pounds compared with 57,500,000 pounds in the first quarter of 1938 and a quarterly average of 78,100,000 pounds for the year 1937. The low production for the June quarter was due to slow demand, the usual seasonal influences, and the adequate size of the yarn stocks held.

The daily rate of shipments of rayon yarn by American producers during July was the largest for any month in the history of the industry, being equal to almost double the June shipments. The sudden favorable change which came over the rayon yarn market during the four-week period from mid-June to mid-July, states the publication, can only be called amazing.

The daily rate of yarn shipments, as measured by the *Organon's* index of 843 for July, compared with 473 for June. To meet the demand, producers naturally were forced to draw upon surplus stocks. As a result, these stocks dropped to a 3.1 months' supply as compared with 3.9 in June. Actual poundage stocks of yarn held on July thirty-first approximated the total holdings at the end of 1937. The practical doubling of shipments during the past month, the paper states, was due to a combination of causes:

"First was the improvement in general business psychology concurrent with the adjournment of Congress, the rise in security prices, etc. Second was the fear that rayon yarn prices would be raised. Third was a normal seasonal increase in yarn demand for fall fabric production; this movement was accentuated by the indicated fall popularity of rayon and rayon-mixture fabrics. "Fourth was the buying up by converters of the relatively small quantities of available rayon fabrics at the prevailing below-cost-of-production prices; similarly, firm orders were placed for fabric to be delivered later on in the season, but at prices which were still very favorable to the buyer."

The sudden change in rayon yarn market conditions causes the *Organon* to strike a note of warning. It continues:

"While it is clear that there has been, and will be, improvement in the demand for rayon goods by the ultimate consumer, it cannot be presumed that this increase in demand is measured by the spurt in yarn deliveries from June to July. Rather, a large part of this June-July increase in yarn deliveries will go toward building up to normal levels the inventories of yarn, semi-finished and finished goods, and fabricated garments held by weavers, converters, and retailers and other distributors of rayon goods

"The inventory reduction policy of the groups mentioned over the past year has been both drastic and effective. If history be a guide, this gradual inventory accumulation period undoubtedly will continue for many months, which fact in turn will keep the primary rayon yarn delivery figure at a relatively high level."

The Basic Yarn Formula

And the Relation of All Cotton Roving and Yarn Calculations to this Formula

By Horace L. Pratt & Emery Nash

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(Article 3)

THIS comprises the third article in a series explaining the use of the basic yarn formula. The first article, on page 52 of the July issue, showed the development of the basic yarn formula and its use. The second article, on page 56 of the August issue, explained the development of constants. This installment clearly shows how to figure average and resultant counts of ply yarn. Copies of the first two installments are available upon request . . .

IN THE TWO PREVIOUS ARTICLES of this series it has been shown how the counts of roving and single yarn may be calculated by employing the basic yarn formula and how constants derived from the basic yarn formula may be used to shorten these calculations. In the course of manufacturing cotton yarns it is often necessary to twist two or more strands of single yarn together to form what is commonly known as *ply yarns*. It is the purpose of this article to show how the counts of ply yarns may be figured by employing the same principles as those applying to single yarns.

Ply yarns may be made by twisting together two or more threads of the same counts or by plying yarns of different counts. Ply yarns made up of single yarns of the same counts are usually designated by the counts of the single yarns and by the number of threads in the ply. A 2-ply yarn composed of two ends of 20s would be called,

20s/2, 20/2 ply, or sometimes 2 ply 20s.

Other examples of ply yarns are,

10s/6, 8s/7, 60s/3.

Ply yarns made up of threads of different counts are usually designated by the *average counts* and the ply. For example, a yarn composed of 1 end of 20s and 1 end of 30s would probably be called 24s/2 ply. (It will be explained later why 24s and not 25s is the average counts of 1 end of 20s and 1 end of 30s.)

In the use of ply yarns it is necessary to know the counts of the yarn resulting from plying the single yarns together. This is known as finding the *resultant counts*. The calculations involving the resultant counts of ply yarns need not prove so difficult if the principles of finding the counts of single yarns have been mastered.*

Suppose two ends of 20s yarn are plied together. By using the constant of 1000, as learned in Article II of this series, the weight of the 20s yarn may be found. (For the purpose of calculating ply yarns the skein, 120 yards, is as convenient as any other length, and as the constant of 1000 may be used when 120 yards form the basis of length, the skein lends itself very readily to our purpose.) The weight of 1 end of 20s will be found,

$$\frac{1000}{20s} = 50 \text{ grains.}$$

Since two threads are plied together, the total weight of the ply yarn will be,

$$2 \times 50 \text{ grs.} = 100 \text{ grains.}$$

We now have a yarn, 120 yards which weigh 100 grains. By again employing the constant of 1000, as learned in Article II of this series, the counts of this yarn will be found,

$$\frac{1000}{100 \text{ grs.}} = 10$$

The resultant counts of the ply yarn will be 10s. In a similar manner the resultant counts of 25s/5 ply would be found:

$$\frac{1000}{25 \text{ grs.}} = 40 \text{ grains.}$$

$$5 \text{ ends} \times 40 \text{ grains} = 200 \text{ grains.}$$

$$\frac{1000}{200 \text{ grs.}} = 5s.$$

From these two examples it will be seen that the *weight* of the yarn after *plying* determines the *resultant counts*, and this *weight is based upon the weight of the single yarns multiplied by the number of threads composing the ply.*

In exactly the same manner the counts of ply yarns composed of threads of different counts may be found. The resultant counts of a ply yarn made up of 1 end of 20s and 1 end of 30s will be found in this manner:

$$\frac{1000}{20s} = 50 \text{ grains, the weight of the 20s,}$$

$$\frac{1000}{30s} = 33.33 \text{ grains, the weight of the 30s.}$$

50 grains + 33.33 grains = 83.33 grains, the total weight of 120 yards of the ply yarn.

$$\frac{1000}{83.33 \text{ grs.}} = 12.0005 \text{ or } 12s.$$

*In connection with finding the resultant counts of ply yarns the question of contraction arises. In actual practice in the mills, contraction is usually neglected except in the case of very heavy yarns and some fancy yarns. For example, in figuring yarns for heavy duck, made from 8 ply or 10 ply yarns, and heavier, it would probably be necessary to allow for contraction caused by twisting the yarns together. In these articles twist contraction will be ignored unless otherwise specified.

A yarn made up of 2 ends of 10s and 3 ends of 8s would be found to size 1.74s by the same method:

$\frac{1000}{10}$ = 100 grains, weight of 1 strand of 10s.

2 ends × 100 grs. = 200 grains, weight of the 10s.

$\frac{1000}{8}$ = 125 grains, weight of 1 strand of 8s.

3 ends × 125 grs. = 375 grains, weight of the 8s.

200 grs. + 375 grs. = 575 grains, total weight of the ply yarn.

$\frac{1000}{575 \text{ grs.}}$ = 1.74s, resultant count of the ply yarn.

Other methods of finding the resultant counts of ply yarns have been worked out and some of these methods are a little shorter than the methods that we have outlined. These short cuts are divided into three classifications, the first rule for finding the resultant counts of yarns composed of the same counts of single yarn, the second for finding the counts of 2 ply yarns made up of different counts, and the third rule for finding the resultant counts of yarn composed of more than two ends of different counts. The one method that we have outlined, that of determining the weights of the yarns making up the ply yarn, combining these weights, then by the simple division of this total weight into the yarn constant, enables one to calculate the resultant counts of any ply yarn accurately, and still see the logic of each step.

In designating ply yarns made up of threads of different counts, and for other reasons, it is necessary to calculate the *average counts* of a ply yarn. This means that where two or more ends of different counts are twisted together an average of the counts is obtained. For example if 1 end of 20s yarn and 1 end of 30s yarn are twisted together this ply yarn would weigh,

$\frac{1000}{20s}$ = 50 grains,

$\frac{1000}{30s}$ = 33.33 grains,

50 grs. + 33.33 grs. = 83.33 grains.

83.33 ÷ 2 ends = 41.67 grains.

If two threads, each weighing 41.67 grains, were twisted together the resultant yarn would have the same weight, and therefore the same counts as if one end weighing 50 grains (20s) and one end weighing 33.33 grains (30s) were plied together. The counts of the yarn weighing 41.67 grains, will be found to be,

$\frac{1000}{41.67 \text{ grs.}}$ = 23.998 or 24s.

Therefore the average counts of a yarn made up of 1 end of 20s and 1 end of 30s has been found to be 24s and the yarn would probably be called 24s/2 ply.

As a further example let us calculate the average counts of a ply yarn made up of 2 ends of 10s and 6 ends of 12.5s.

$\frac{1000}{10s}$ = 100 grains, weight of 1 end of 10s,

2 × 100 grs. = 200 grs., total weight of the 10s.

$\frac{1000}{12.5s}$ = 80 grains, weight of 1 end of 12.5s.

6 × 80 grs. = 480 grs., total weight of the 12.5s.

200 grs. + 480 grs. = 680 grains, total weight of the ply yarn.

680 grs. ÷ 8 (total ends in the ply) = 85 grains, the average weight of the threads making up the ply yarn.

$\frac{1000}{85 \text{ grs.}}$ = 11.76 (Average counts)

The yarn would probably be called 11.76s/8 ply.

It is quite unlikely that a ply yarn, unless in the fancy yarn classification, would have to be made up of several different counts, but in order to illustrate why average counts cannot be figured by just adding up the yarn counts of the yarns making up a ply yarn and dividing by the number of ends in the ply, let us suppose that a ply yarn is to be made from one end each of 5s, 10s, 12.5s, 20s and 25s. First let us add the counts and divide by 5, the number of strands in the ply,

5 + 10 + 12.5 + 20 + 25 = 72.5

72.5 ÷ 5 = 14.5 (Which might seem to be the average counts.)

Now let us employ the yarn constant of 1000 and get the average weight of these items.

1000 ÷ 5 = 200 grs. weight of 120 yds. 5s yarn
1000 ÷ 10 = 100 grs. weight of 120 yds. 10s yarn
1000 ÷ 12.5 = 80 grs. weight of 120 yds. 12.5s yarn
1000 ÷ 20 = 50 grs. weight of 120 yds. 20s yarn
1000 ÷ 25 = 40 grs. weight of 120 yds. 25s yarn

470 grains total weight

470 ÷ 5 (total ends in the ply) = 94 grains, average weight of the yarns.

$\frac{1000}{94 \text{ grs.}}$ = 10.64s.

10.64s is therefore the average count of this ply yarn. At first thought it might seem that 14.5s would be the average count, but after working out this problem in detail we find that this cannot be true. This bears out our theory that all cotton yarn calculations must, in the last analysis, be based upon weight to a unit length.

The next article in this series will explain how the yarn formula is used in problems involving yarn on beams, front roll production of frames using rolls for delivering the product and in calculating filling needed per yard of cloth.

Keeping Cloth Weights

(Continued from page 52.)

All section beams are weighed to compare with the standard.

Daily reports cover the actual yards per pound weight of every package put up in the cloth room, and the weekly report shows the average actual yards per pound of each style for the entire production for the week.

In this part of the country we are subject to rather radical changes in weather conditions, and occasionally we have to make changes in our warp or filling yarn weights for an immediate control, but outside of these conditions, or at a time when we change from one crop of cotton to another, we are usually able to control our weights from card room changes, particularly on our drawing.

Our cloth weights are generally held within three-quarters of one per cent of standard.

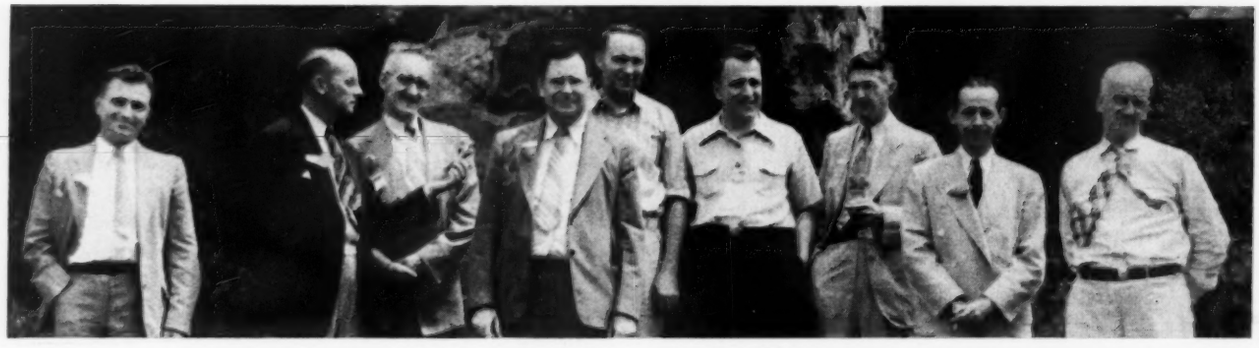
Chemists and Colorists Enjoy Fine Outing on Lookout Mountain

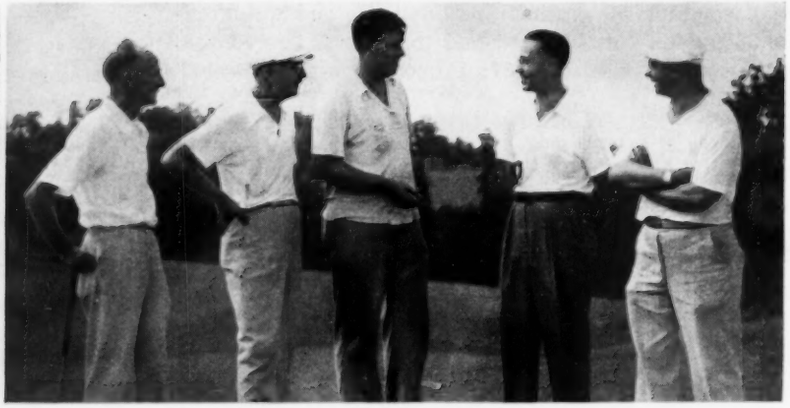
THE SOUTH CENTRAL SECTION of the American Association of Textile Chemists and Colorists held its annual outing at Lookout Mountain Hotel, near Chattanooga, Tenn., on August 5 and 6. It was a thoroughly enjoyable occasion, attended by nearly 200 members and friends of the organization and their ladies. A golf tournament, horseshoe pitching contest, bridge tournament, and special contests, and a banquet on Saturday evening composed the program, which included nothing of a technical nature. Nestor Groteleuschen, of Magnet Mills, Clinton, Tenn., is chairman of the section, and W. S. McNab, of Quaker City Chemical Co., Knoxville, is secretary. Robert Covington, of Davenport Hosiery Mills, Chattanooga, Tenn., was chairman of the outing committee. A large number of prizes, made possible through contributions of supplying firms, were awarded at the banquet.

In the golf tournament, Frank Myers, of Chattanooga, won low gross; Dan Rion, of Cedartown, second low gross; and Pete Gilchrist, of Charlotte, third low gross. A. Henry Gaede and W. A. Bentel tied for low net. Other golf prize winners included Tom Sledge, Jack Anderson, F. W. Silver, Bill Evans, George McCarthy, Irving Royce, W. A. Stuart, and Jeff Gilreath. McGee Calhoun, of Ware Shoals, was awarded a prize for the highest golf score.

Melvin Cooper and Homer Whelchel won first prize in the horseshoe pitching with James Cook and Chester Cobb second. C. E. Rollins and John W. Ross won single prizes. In the ladies bridge tournament, Mrs. Ed Landis won high score prize; Mrs. Frank Myers second; and Robert Philip won the men's prize in the ladies' contest. Mrs. H. O. Shuptrine won the cut prize, and Mrs. Fletcher Kibler the "bingo" bridge prize. The bean bag contest was won by Mrs. W. H. Jackson, and the "shoe scramble" by Mrs. W. A. Pardue.

Some Candid Camera Shots at the Lookout Mountain Party





These snapshots at the Lookout Mountain outing were made for "Cotton" by J. A. Crumley, of the Hosiery Processing Company, Chattanooga. They show: **Top row:** Some of the gallery at horse-shoe pitching; W. A. Pardue, Jack McKee, A. R. Macormac, Bob Covington, Homer Whelchel, Si Parker, Jim Brown, Bill Kelly, and W. E. Hadley. **Second row:** left, a section of the ladies' bridge party; right, Homer Whelchel counting the score in the horse-shoe pitching, surrounded by participants. **Third row,** left to right: golf three-some: G. R. Newell (in shorts), W. H. Jackson, and George Dozier; five-some, W. T. Sledge, Malcolm McKenzie, Henry Gaede, Fletcher Kibler and Bill Bertolet.

The Why and Wherefore of FABRIC DESIGNING

By T. O. Ott, Jr.

(Article 5)

THIS article is the fifth installment of a series on designing written especially for COTTON by Mr. Ott. The series covers the fundamental principles of designing and in no way attempts to release specialty fabrics for production purposes. Taken up in this installment are yarns, their analysis, and construction for plain or fancy cotton goods mills . . . . . .

BEFORE ENTRY into the more advanced discussions of fabrics the designer must know yarns and yarn construction thoroughly. Most of this knowledge will come from constant practice in fabric and yarn analysis. Very often yarns will be sent to the mill for duplication where the personnel will have little or no experience in it's manufacture. Unless someone has some idea of how these yarns are made then much costly experiment will result.

It usually falls the lot of the designer, especially in the smaller mills, to analyze and classify the various yarns received and to initiate their reproduction in the mill. This calls for experiment in yarn manufacture and color matching. A vast store of useful knowledge that pays big dividends to the ambitious young designer can be accumulated in this manner.

This article will deal primarily with the yarns that ordinarily are made in a plain or fancy cotton goods mill. It is certainly beyond the scope of any short article to more than touch the high spots in yarn construction and classification. First, a good method of procedure in yarn analysis will be described and then a general classification of plain and fancy yarns common to cotton mills will be given.

It is hoped that this will be of benefit to the man in the mill who seriously wants to inquire into yarn manufacture in general. For hairsplitting definitions and classification the author intends to leave this to the man who has developed a wide experience in yarns. However with these notes as a starting point the designer need have no limit as to his inquiry or knowledge of yarns.

Tools Needed for Analysis of Yarns

The tools needed for the analysis of yarns are simple. The ordinary mill twist counter and a pair of yarn scales used for sizing yarns will suffice. However, it is a great boon to the designer to have highly developed instruments that will give extra accuracy and speed of analysis. These instruments will not be described here as the first mentioned equipment is usually found in most every mill and will be accurate enough for all practical purposes. In addition, a pick glass or some magnifying glass is often helpful in some analyses. The author always uses the direct reading yarns balances described in the second installment of this series on "Fabrics Analysis" [page 64, March 1938 issue COTTON.] Here direct readings of counts on cotton, wool, worsted, or linen counts may be read directly by using different templates for the various yarns.

To analyze a plain, natural, or colored yarn:

Weigh up a definite length of the yarn on the grain scales and calculate the count. For example, if we weigh up 10 yards of a yarn on the scale and get a weight of 7 grains the calculation would be as follows:

$$\text{H. R. or count} = \frac{\text{Grains per lb.} \times \text{length weighed}}{840 \times \text{wt. grs. of length of yarn}} \text{ or}$$

$$\frac{8\frac{1}{3} \times \text{yards in sample}}{(\text{wt. in grains of sample})}$$

$$\text{count} = \frac{7000 \times 10}{840 \times 7} = 12\text{s or}$$

$$\frac{8\frac{1}{3} \times 10}{7} = 12\text{s}$$

Thus the yarn is a 12s/1, of course, providing that no sizing has been added in finishing or previous to weaving. Theoretically an arbitrary per cent of size may be assumed to calculate the true count but to be accurate the yarn should be boiled out in some de-sizing agent and reweighed and calculated as the foregoing. The true percentage of size is then easily calculated by taking the difference in weight of the identical lengths of yarns and figuring the percentage of weight added to the original weight of the sample. Thus if on de-sizing and drying to the original condition the same 10-yard length shows a difference in

The first article appeared on page 56 of the January 1938 issue and covered the scope of the designer and the sample in process for which there is no original sample; the second article appeared on page 64 of the March issue and took up the essential steps in reproducing a sample fabric and in calculating cost of production; the third article, on page 55 of the June issue, was devoted to a study of the basic weaves; their classification, and uses in different fabrics; the fourth installment, on page 55 of the July issue, gave a complete study of fabrics as to construction, texture, weave, and design.

weight of 46 grains the per cent of size added would be:

$$\frac{\text{original wt.} - \text{de-sized wt.}}{\text{desized wt.}} = \% \text{ size added.}$$

$$\frac{.46}{6.54} = 7\ \% \text{ size added.}$$

Of course, with such a small sample as 10 yards, variation in moisture and the comparative roughness of the grain scales may cause considerable error. If an accurate determination is needed then a much larger length of yarn should be tested or a much more accurate scale should be used. However, for all practical purposes this determination will do.

Next comes the determination of the twist per inch in the yarn and the twist multiplier used. With a plied yarn this is easily accomplished by setting off a definite length of yarn, say 10 inches, and removing the twist with the counter. The dial reading divided by 10 gives the twist per inch and the multiple used is obtained by taking the square root of the plied count and dividing it into the twist per inch. With a single yarn this is not so easily done as the twist cannot be so readily run out as with a plied yarn. This can be facilitated by rolling out the twist with the left hand toward the counter spindle until the twist is removed. The twist is calculated in the same way and the twist multiple found by taking the square of the spun count and dividing it into the turns per inch in the yarn.

At this point the yarn can be classified as to number and twist. This is a variable factor for each type analyzed. Very often in a fabric numerous single analyses must be made to get the composition of the yarns in the fabric. If the yarn is to be duplicated then careful notes must be made of all the findings made. See the form (Fig. 1) given for a very satisfactory means of permanently recording all data.

In determining twist in a yarn, the direction of twist is just as important as the amount. Much has been written on this subject of designation of twist direction, the accepted method being the terms "S" and "Z" twist, "S" twist designating twist in the direction of the mark joining the two opposite convolutions of the letter "S" or more commonly known as reverse or cross band, and "Z" twist designating twist in the direction of the line joining the top and bottom elements of the letter "Z" or more commonly known as straight or open band twist. ["Z" twist is regular or right twist and "S" twist is reverse or left twist.] The yarn twist is compared with the letter while being held in a vertical position. This determination of twist is most essential in analyzing the make-up of all composite or novelty yarns.

Analysis of Novelty Yarns

Novelty yarn analysis presents a more intricate problem to the designer. Here the type of yarn to be dissected has a great deal of bearing on the procedure used. No set routine can be given to guide the analyst except that the data must be accurately recorded as the dissection proceeds. Here the form mentioned previously is a great help. This does not apply to novelty yarns that are spun as novelties because their analysis on the twist counter gives only the twist of the yarn. The make-up of the single novelty yarn must be traced to processes at the spinning or previous to it. Only experience and all around knowledge of these processes can give the analyst the clues to the make-up. Our problem of analysis will be limited to those yarns that are made on the twister or novelty twisting processes. To give the reader a better idea in the solution of such problems we will give the complete analysis of a novelty yarn now in use in a great many novelty fabric mills. The selection is a ratine yarn.

YARN ANALYSIS RECORD

YARN COUNT 1800 Yd. TYPE Ratine DATE REC'D 9/1/37

ANALYSIS

PROCESS	COMBINATION YARN NAME & Nº	SINGLE YARN NAME & Nº	LENGTH	TWIST	T.P.I. OR T.M.	
last	binder-20s/1 with 1st. pro. combination		10"	S	10½	
1st. pro	effect 8s/1 with core-20s/1 2-ends up		10"	Z	28	
		binder 20s/1	10"	Z		4.75
		effect-8s/1	23½"	S		3.50
		core-20s/1-2 up	10½"	S		4.75

MAKE-UP

From the analysis it may be seen that the novelty yarn is made up of four different yarns in combination; a binder, an effect yarn and two ends of a core yarn. The binder yarn is spun straight or Z twist with a multiple of 4.75, the core yarn is spun with reverse twist or S twist with a multiple of 4.75, and the effect yarn is spun reverse or S twist with a multiple of 3.50.

The first process of novelty twisting was done on a novelty twister with two sets of separately controlled rolls, the 2 ends of core being run through one set and the one end of effect being run through the other. The effect yarn is delivered very much faster than the core yarns so that it is coiled about the core yarn in a spiral effect.

The completed 1st. process yarn is then twisted S twist in combination with the one end of binder just as an ordinary two ply yarn.

ANALYZED BY Ott
DUPLICATED BY JPB
DATE 9-15-37

FIG. 1

A Ratine Yarn Completely Dissected

1. The yarn in question is first sized to get the composite count of the complete yarn. In this case the size of yarn indicated was 2.14s to 2.25s cotton count. This yarn is designated as an 1800 yd. ratine. Since most novelties run into the heavy counts of from 1s to 8s a system of numbering these yarns is in general use in the novelty trade. The basis is that a No. 1 yarn is 840 yards, then a No. 2 yarn is 1680 yards, etc. Thus novelty yarns are known in yards of yarn to the pound. This system allows small variations in weight to be more readily noted and controlled.

2. Now this yarn on close examination proves to be made up of four yarns; a fine

yarn used as a *binder* twisted with the other three yarns that have been previously combined on a novelty frame or twister. A heavy soft spun yarn is coiled about two *core* yarns in the first process. This yarn is known as the effect yarn. All this can be determined by a visual inspection before the yarn is dissected for make-up.

3. The yarn is then placed in the twist counter (a 10-inch length is most desirable) and the "binder" is untwisted from the first process yarns and the twist is recorded both as to direction and turns per inch. In addition the length of binder after it is untwisted is measured for length, as is the first process yarns. This is done because both these yarns may be run through controlled delivery rollers on a novelty frame to get the exact effect desired. Here it may be stated that no variation or measurement is too small or unimportant to be noted. To measure these two different yarns they must be cut away exactly at the spindle. This, of course, necessitates putting in a new length of yarn and repeating the untwisting of the binder. All dissected yarns are saved in order to get enough of each of the yarns used to get an accurate size of the yarn number for the record.

4. After the second binder is untwisted it is then cut away and the twist counter dial set back to zero without disturbing the first process yarn. At this point it may be well to note that this first process yarn is in the exact state that it is delivered to the final twisting process where the binder is added. In addition it may be well to note that a complete ratine or other novelty yarn is said to be balanced when by breaking with the hands a length of the yarn all core and binder yarns break together.

Now to proceed with the analysis, with the counter dial at zero and the first process yarn in the counter we untwist the effect yarn from around the core yarns, noting the amount and the direction of the twist. The length of the core yarns and the effect yarn is then measured and recorded.

5. With the novelty yarn now completely taken apart the next step is to test each type of single yarn for amount and direction of twist. Then each yarn is sized to obtain the spun count. This is done just as for other single spun yarns as previously described.

With the foregoing steps the analysis is complete and the designer has accumulated information on the make-up of the novelty yarn in the reverse order of its actual manufacture. Analysis of novelty yarns may be summed up as the reversal of the order of manufacture. Each step in the dissection suggests the process used for the effect obtained.

The proper use of the twist counter saves countless costly experiments in trying to duplicate yarn effects where more than one yarn is used in the novelty effect.

Reference to Fig. 1 where all the data on this dissection has been recorded on an 1800-yard ratine will give a complete picture of what is needed in the way of data properly to duplicate a novelty yarn.

The classification of yarns generally encountered by the designer in the cotton mill naturally does not cover the exceptional. For the designer who does wish to have a basis for classification it will serve admirably. The writer realizes that many yarn men are expert on such cataloging and in some cases he may differ widely from what they consider the proper description in which case he is open for correction. However from about 10 years in working with various yarns he has found this frame-work of yarn definition very workable.

I. *Classification of Yarns as to Twist.*

(a) Standard twist warp yarns are yarns spun with enough twist to withstand the processing of the warp through the warping, slashing, weaving, and possibly the finishing operations. The twist multiple may be varied from 3.75 to 5.00 according to the cover desired in the warp and the strength desired in processing. Yarns tend to increase in strength with the increased twist multiple up to a certain point where it may be lowered by excessive twist. All this must be determined by the results required and the range and quality of the yarns spun.

(b) Standard twist filling yarns may vary over a considerable range according to weaving qualities desired and the effect that is to be obtained in the fabric. The lowest and highest twist is that which is consistent for good weaving. With an extra low twist the filling may cause excessive loom stoppage by pulling into, while conversely an extra high twist may cause poor ballooning from the quill with tangled yarn and kinky filling in the cloth. Here, as with warp yarns, the quality of the yarn spun has a direct bearing on the amount of twist inserted. Many low quality yarns are made for filling and enough twist must be inserted to get good weaving. Sometimes good weaving is sacrificed in order to get the desired effect, in which case the weaver must devise some way to get good weaving on a poor yarn.

(c) Non-standard twist warp or filling yarns may be made to get some special effect. This will include extra high or low twists in yarns. Under this class will come reverse spun yarns, or "S" twist or cross-band yarns, used for special novelty effects in both warp and filling. In yarns spun for composite novelty yarns constructed by controlled twisting on novelty frames much off standard spinning is done.

(d) Cotton waste yarns may be classed here as they are made by one of several systems of waste spinning according to the effect and quality or fineness of the yarn desired. The woolen system of spinning is in wide use for making full soft or cheap yarns for filling for blankets, suiting, and backing yarns. They are characterized by the fact that on most such spinning the fibers are not carded so as to lay parallel but are formed in a random mass.

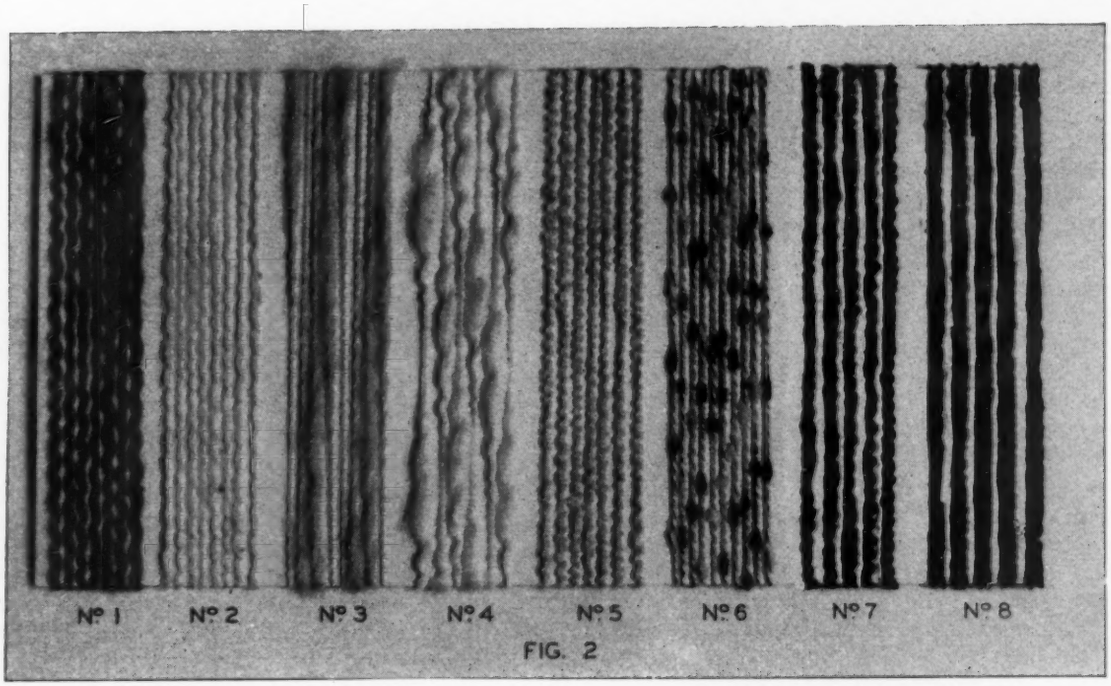


FIG. 2

II. *Classification of Plied Yarns.*

(a) Plied yarns of the same count, usually termed folded yarns, are most common in all heavy fabric manufacture. For warp yarns the plied twist must be sufficient to withstand the process of weaving. These yarns are more often than not woven without the addition of size for added strength, so care must be exercised that no soft ends are present. The number of single yarns used in the ply is controlled by the strength and effect desired. Plied yarns may vary from the much used two-ply to any practical ply desired, the limit being the effect produced and the facilities of manufacture. The heavy goods industries, the tire fabric manufacturers and canvas and duck manufacturers, carry this out to a high degree of perfection.

(b) Cabled yarns are plied yarns that are plied on themselves in an opposite direction to the first direction of the ply. This twist is balanced to give an even yarn free from kinks. For example we are supposed to make a cabled yarn in 8/4/4, read 8s 4-ply four, the 8s 4-ply is first made, say with a twist multiple of four which gives four turns per inch in the ply. Two ends of 8/4 are then twisted cross-band with a twist multiple of say 3.50 to make the cable. Usually this type of yarn is made in much higher plies where twister creel capacities do not permit of twisting properly. The yarn is also characterized by having less twist inserted than in a yarn plied only once. However, this depends on the use to which the yarn is to be put. If harder twists are desired then more twist must be inserted in the original ply.

(c) Crepe yarns are either single or plied yarns that are characterized by exceptionally high twists. This causes the yarn to be difficult to control but it has the advantage of causing irregular rough surfaces to fabrics woven of the yarn when shrunk. Special methods of handling of such yarns are used in order to obtain proper processing.

(d) Yarns of different size when twisted give special novelty effects and will be noted under novelty yarns.

III. *Classification of Novelty Yarns.*

(a) Spiral yarns consist of a reverse spun yarn twisted with a heavy soft spun effect yarn twisted in a reverse direction. The heavy yarn is controlled in its delivery so that the delivery is in excess of that of the fine yarn. This causes the heavy or effect yarn to twist around the fine yarn in a spiral effect. See No. I. Fig. 2 in the photograph of novelty yarns.

(b) Corkscrew yarns are similar to spiral yarns in appearance but the spiral is not so pronounced. They are usually made with a hard spun core yarn and a soft spun effect yarn twisted together. Both yarns are regular twisted in the spun count and twisted just as are other plied yarns. The delivery of the heavy yarn is not controlled as a rule, the corkscrew being obtained by the difference in the sizes of the yarns. See No. 2. Fig. 2.

(c) Flake yarns are characterized by regular or irregular slubs and thin places alternating in the yarn. These yarns are produced in the spinning process by special gears or attachments designed to produce the desired effect in the single spun yarn. Often this yarn is spun with a core yarn delivering to the front roller, as well as the roving, or they are twisted later with a fine

single or a 2-ply binder to give strength or effect to the yarn. See illustrations of the several different types of flakes No. 3 and 4. Fig. 2.

(d) Ratine yarns are the first true novelty yarns produced at the twisting process from yarns of special twist, both as to amount and direction in all processes. The ratine is built up from a core yarn consisting of two ends of a fine number spun reverse so that in the last process of twisting a plied yarn twisted cross-band or standard will result to give strength and balance. The effect yarn, also spun reverse with a low twist multiple, is then put in the novelty twister with the core yarns but under separately controlled rollers from the effect yarn. Each set of rollers is controlled so as to deliver the core or the effect yarn at the proper ratio to each other. These yarns are characterized by a rough plaited appearance. See No. 5, Fig. 2.

(e) Frill yarns are similar to ratines in construction but do not have as rough an appearance as ratines.

(f) Seed yarns have the appearance of a composite yarn with seeds or nubs formed by bunches of yarn built up on a core at intervals. They may be colored or natural, the best effects being produced in the colored. They consist of 2 ends of a core yarn in a fine count over which is twisted one or more different colored yarns that are delivered very much more rapidly than the core yarn at intervals so they form knots or bunches of yarn. These bunches may be in one, two, or three colors as desired. The core yarns and the seed yarns or effect yarns are all fine yarns, usually all regular twist or "Z" twist. See No. 6, Fig. 2.

(g) Curl or loop yarns are characterized by loops which are spaced openly and distinctly on a core yarn base. These yarns are constructed from a "Z" twist loop, forming yarn twisted with two threads that have been twisted "S" twist. The effect or loop yarn proper is heavy and is loosely twisted around the core so as to curl up and form loops when this last composite yarn is twisted "Z" twist with a binder. The last twisting process brings out the loop effect in the finished yarn. Not shown on illustration. No. 7. Fig. 2 gives effect only.

(h) Chenille yarns are formed in a very different manner from the twister novelties. They have a soft full pile around a core of four or more ends woven in leno fashion. They give a rich appearance when dyed and are used as both warp and filling in fancy fabrics. The yarn is formed in the natural usually by weaving a leno fabric of 40s/2 or finer warp and a soft filling yarn of low count. The fabric is dented in the reed to give a definite cut or number of cuts per inch when the fabric is later run over a special cutting machine. In other words the ends are crowded and dents are skipped so as to divide the fabric off in strips of so many to the inch, the cloth later being cut warp ways down the open spaces left by denting. The crowded leno ends hold the cut filling yarn tightly and form the chenille. These yarns are more successfully handled when skein dyed. See No. 8, Fig. 2.

In closing it may be said that the number and variety of yarns known as novelty are countless. Any yarn of unusual formation of course is a novelty. However these notes will introduce the beginner to a few of the better known of the novelty family.

Article 6 in the series will appear soon.

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Testing Company Completes Training Course

A definite departure in consumer education was instituted at the United States Testing Company, Inc., laboratories in Hoboken, July 11 through July 22. A course in fabric testing was given to a group of women selected from such fields as home economics, home making, industry and research; representatives from New York, New Jersey, Pennsylvania, Washington, D. C., Wyoming and Texas.

The course was in charge of G. R. Turner and technicians of the staff of the Fabric Testing Department. Theory and practice were combined in demonstration and use of standard testing equipment for consumer serviceability tests. This marks a progressive step towards better consumer understanding of the problems confronting the manufacturer and retailer and of the tests which have been developed for the standardization of merchandise.

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Tests on Durene Yarn

Following the completion of a series of exhaustive tests made by the United States Testing Company, Inc., the Durene Association of America, 468 Fourth Avenue, New York, announces the discovery of new and important properties possessed by Durene yarns. The tests conducted by the United States Testing Company reveal that undergarments when knitted from Durene absorb and evaporate perspiration twice as fast as undergarments of the exact same construction knitted from unmercerized combed peeler cotton yarn. Dean Hill, president of the Durene Association in making this announcement says that the importance of this discovery cannot be overestimated by knitters and retailers. Mr. Hill expects these powers of absorption and evaporation possessed by Durene yarn to be a powerful weapon to be used in the future by retailers to combat the abandoning of the wearing of undershirts by men and boys and to increase dollar volume of sales in the knitted underwear departments. In discussing the importance of this discovery, Mr. Hill points out that body comfort in summer depends on the transmission of heat away from the body. To keep cool the body has a most important regulator in perspiration and that the rate of cooling depends on the rate of evaporation of perspiration. Mr. Hill feels that the statement of the simple fact that a knitted mercerized combed peeler undershirt will absorb and evaporate perspiration twice as fast as an unmercerized combed peeler undershirt, when made to buyers will prove effective.

Milestone in Drive for Cotton Bagging for Cotton Bales

Momentum Given Program by Purchasing of 1,000,000 Bale Patterns, and Allowance for Tare by Mills . . . . . .

This photograph shows two bales of cotton wrapped in the new cotton bagging, order for one million patterns of which has been placed with the Lane Cotton Mills Company. The bale on the left is bound with conventional steel ties; the ties on the bale on the right are made of cotton rope which, it is predicted, may eventually replace steel on the cotton bale. Sigmund Odenheimer is seen at the right.

The use of cotton bagging for covering cotton bales has long been an objective of the cotton-textile industry. Sigmund Odenheimer, president of the Lane Cotton Mills Company, New Orleans, La., was the pioneer in this movement and is now the outstanding advocate.

Other than an inadequate tariff on jute, and the established use of jute bagging for covering cotton bales, the major disadvantage which cotton has had in this field has been the established system of gross weight trading in cotton. The six yards of 12-ounce cotton material required for covering a bale weighs 4½ pounds, whereas the six yards of 2-pound jute bagging weighs 12 pounds. The steel ties ordinarily weigh 10 pounds per bale. Therefore, if a farmer has 500 pounds of lint cotton and uses the ordinary bagging and ties, the gross weight of the bale will be 522 pounds, but if he uses cotton covering the gross weight will be only 514½ pounds. This reduction of 7½ pounds in gross weight results in a loss to the farmer of 75 cents per bale when the cotton is worth 10 cents per pound; in other words, this gross weight selling system places an artificial disadvantage of 100 per cent against the use of cotton material.

In recognition not only of the better appearance of the bale and its better condition upon arrival at destination, but also of the tremendous outlet that would be provided for cotton products by the general use of cotton bagging for cotton bales, the U. S. Department of Agriculture has approved a program under which a maximum of one million patterns of cotton material will be made available for covering cotton bales at a price of 45 cents per pattern, or bale covering. It has been demonstrated that this cotton material under present conditions can be sold at essentially the same price as jute bagging. From the standpoint of inherent economy and efficiency there is no reason why cotton cannot be used successfully in this field.

For about 50 years, efforts have been made to secure passage of legislation establishing net weight for cotton, which would eliminate the disadvantage to cotton resulting from the gross weight selling practice. The Cotton-Textile Institute and other industry organizations as well as the Southern Commissioners of Agriculture and other groups have passed repeatedly resolutions in favor of net weight trading, which is fair to the mills in the trade, as well as to the farmers. It permits an accurate determination of value and price on the basis of the net content of the bale, rather than a rough approximation based on the amount of tare ordinarily added to the bale.

In furtherance of the program, the Cotton-Textile Institute began last winter a campaign to induce the mills of the United States to agree to make an appropriate allowance for the lighter weight of tare when purchasing cotton wrapped in cotton material, and to date mills having approximately four million spindles have agreed to make such an allowance and it is to be hoped that all mills will see fit to purchase cotton-wrapped bales on this basis.

In furtherance of its efforts to this end, the Department of Agriculture has placed contract with the Lane Cotton Mills Company of New Orleans for one million patterns of 6 yards each of 12-ounce cotton bagging, which is now available in the extensive experiments as to the feasibility of the use of cotton bagging. Sale will be confined to ginners and cotton co-operatives serving one-variety or improved cotton communities, which will permit an accurate check on the results.

The contract with the mill is to supply the cotton bagging at 45 cents per pattern. The Department of Agriculture pays the mills a subsidy of 28 cents a pattern, to compensate for manufacturing and distribution costs.

Mr. Odenheimer, who pioneered the idea of cotton bagging for cotton bales back in 1888, states that during the past 50 years the total of such cotton bagging used in this country has approximated seven million yards, and now nearly as much is to be used from one mill in one season. The Lane Cotton Mills Company obtained the contract in competitive bidding and there are, Mr. Odenheimer states, at least nine other mills equipped for the manufacture of this bagging material.

The opportunity is thus provided, by the action of the Department of Agriculture in making the one million patterns available at 45 cents per pattern, for the cotton mills to exercise their agreement to make an appropriate allowance for the lighter weight of tares, or to purchase the cotton on a net weight basis with allowance for the entire weight of tare deducted. To facilitate the shift from the gross weight basis to a practical net weight basis, the Department of Agriculture has prepared a table showing the necessary credits for cotton-covered bales. This shows for any pound price gross weight of cotton in 2-pound bagging, the corresponding allowance to be made (1) when cotton is covered in ¾-pound covering and, (2) when cotton is bought on straight net weight.

Thus arrangements are made so that a tremendous step toward the universal use of cotton covering for cotton bales has been made. The allowance to be made by the purchasing mill is extremely slight; the cotton grower will not lose anything by using the lighter weight bagging as compared with jute bagging, and a general use of cotton-covered bales will make possible thorough tests of the efficacy of the idea and add great impetus toward the objective for which the industry has so long sought.

CURRENT TEXTILE TOPICS ....

Talk of the Month

JUNE'S STARTING WAVE of recovery in the cotton industry and several other lines of activity receded at mid-summer. Waves have a habit of receding and man's activities seem to follow nature. In cotton a mid-summer lull is logical. If only because of uncertainties over the cotton crop itself, trading in cotton goods is done cautiously. That factor began to be dominant in the goods market early in July and continued to be so for some time after the August 8 crop report was issued.

First big wave recedes but larger one in sight

Cotton industrial progress through the summer also was of a piece with a common tendency or tendencies. Securities and all commodities had a substantial swing upward, a wave of advances in which traders signified their confidence in broad fall business and recognized the low inventory position that existed. This spurt was rather abrupt and its very pace, with real broadening of purchasing not expected until fall, brought its own pause.

In this first wave, moreover, the foresighted made good purchases of everything at bargain levels. They were content to settle back in the middle of the summer and wait for trade and markets to digest the move. As in all such cases, when buying pauses, no matter how much underlying confidence there is in the outlook the speculative markets realize a dip—in the professional lingo of the stock market, there is a corrective movement.

Looking Back on Conditions

This turn brought a testing period of five weeks or so in the market for cotton goods, aggravated by hesitation that began in July as buyers of yarns and goods waited for the measurement of cotton crop prospects. Right up to the time the government issued its bearish forecast on August 8, sellers of yarn and goods resisted concessions notably well, in spite of a gradual sinking of the market for the raw material.

When finally the market showed a break of more than 1 cent a pound, or $5 a bale, from the July peak the markets for cotton products had to yield moderately. The disposition of yarn sellers to resist the cotton trend, however, was cited as very significant. It was the first time for a long while that yarns had resisted following raw cotton, a circumstance which was laid to belief among a large majority of spinners that the rest of the year was to show a sellers' market.

Likewise in the goods division it was felt that the date of the cotton crop marked the culmination of uncertainty, preliminary to a second and larger wave of recovery. In fact the situation in all textiles was notably firm and promising, even in the midst of summer hesitation. The reason for this lay partly in the very position of textile mills. Moderate but steady operation of mills, along with other industry, was the beginning of better national employment. Work and wages, obviously, are the things on which recovery is built.

Commodity prices are dominant in recessions of industry, but demand makes the market levels for goods in times of prosperity, largely regardless of raw materials. This was the reason for resistance to declines as cotton weakened sharply through July and August. At the end of two weeks following the August crop report, however, printcloths and sheetings were down materially from July highs, in adjustment to the cotton weakness. Printcloth and sheeting comparisons are given herewith:

	Aug. 22	High July
Printcloths		
38½-inch 60x48s	3⅞	4¼
38½-inch 64x60s	4⅛–¼	4¾
39 -inch 68x72s	5	5½
39 -inch 80x80s	6 ⅛–¼	6¾
Sheetings		
36-inch 5-yards	4⅜	4⅝
37-inch 4-yards	5⅛	5½
40-inch 2.85s	6⅜	6¾

June and early July buying of cotton goods took good care of distributors for the summer, though by mid-August it was noticeable that supplies of finished merchandise were scarce. This was reflected in requests for shipments of gray goods ahead of delivery date, even though buyers were slow to place new orders. At the same time, various lines of industry were increasing employment by many thousands of workers, confirming confidence in the broadness of business that long has been expected this fall.

Under such circumstances, cotton manufacturers were not much disturbed by the weakness of raw staple. The industry was still waiting for a chance to get to a profitable level of prices, for the first advance of the summer had not lifted the market even to cost levels. Excess supplies of raw cotton did not mean surplus of goods and it was felt that mills should take advantage, in a time when demand was looking up, of the lower cost of staple to reduce the margin of loss on goods.

Encouraging for the future was the general industrial picture at mid-August, as indicated by the Associated Press. For the fifth consecutive week the A. P. index had shown an advance. On the basis of 1929-1930 as 100, cotton manufacturing was second highest of six components in the index, with a figure of 107. Moreover, this was only 4.8 points below the figure for the industry a year before, when the rate of activity was on the decline. It had fallen from 121.5 to 111.8 in a week at mid-August last year.

NEW ENGLAND started off the new cotton year in a confidence that this section will realize a great improvement over 1937-1938. The prevailing spirit in August, despite the lull after an early summer

burst of activity, was that mills will reap a substantial business and realize an eventual profitable turnover. Low inventories of distributors, together with a growing demand based on better employment and huge lending-spending by the government, are auguries of mill improvement.

New England Mill Situation

Improving conditions for the automobile industry during the past two months, especially heavy reduction of inventories pointing to substantial orders for new cars this fall, are one important element to New England. Even the large demand for second-hand cars is a factor, because such centers of textiles as Fall River and New Bedford find tire-yarn mills an important part of their cotton industry and these have been lagging.

Retail business had not reached 1937 levels up to mid-August, but that department of activity never leads in recovery. This section is so much industrial that as goes industry so goes the section. The pick-up in textiles this summer was only one phase of industrial improvement, all betokening a healthy movement in the coming months.

August quiet in the market for fine cotton goods, part of a general slackening from the earlier spurt in all gray cloths, left orders temporarily below the improved rate of production. It was felt that the buying would show a new broadening around Labor Day and that the mills, accordingly, would make further expansion of operations without any letdown from the summer pace. Speculation sentiment was allayed by the August cotton forecast, but mills figured that sound purchasing based upon actual demand would bring good orders.

Improvement Noted

Among interesting reports lately is one that the Naumkeag Steam Cotton Company has made a much better than average showing this year. The experience of this company is attributed to high-class methods in the sheeting end of cotton textile business. The Naumkeag has paid two dividends of 50 cents each in the current year and summer operations were not far below full capacity.

Encouraging as a sign of mill change is a bit of improvement by the Saco-Lowell Shops, large manufacturer of preparatory textile machinery. Its earnings suffered in the first half of 1938, following good business for two years, but recent orders have shown some increase.

Drastic declines in the mill business of the recession culminating last spring affected even the specialty producers. The Kendall Company, well known producer of surgical and other textile specialties, had a loss for the first 24 weeks of this year. This circumstance, however, only emphasizes an unusual record. For 15 years previously it had had only one loss, viz., in 1930.

Lowell, Mass., a city of diversified textiles these days and formerly a great cotton center, is reported doing well in the current recovery. The Merrimack Manufacturing Company is one in the cotton division that has picked up considerably, restoring work to many old employees long idle. Its general business has improved and an added fillip to activity came from a WPA project involving 175,000 yards of corduroy.

Stockholders of the Otis Company, a Massachusetts corporation formed 98 years ago, were called on August 15 to act on the sale of the Columbian mill properties at Greenville, N. H. This action was thought probably to be the precursor to dissolution of another of New England's very old textile enterprises. A contract had been signed, subject to approval by two-thirds of the stockholders, for sale to Denim Mills, Inc., of land, water power rights, buildings, equipment, raw materials, inventory of the Columbian mill.

This mill is a producer of high-grade denim, with equipment including 15,000 spindles and 610 looms. It has not, however, been profitable. An approximate loss of $221,106 was reported as incurred from October 7, 1933, to July 23, 1937, and an indicated further loss of $125,418 from October 2, 1937, to July 23, this year. The Otis company sold its Ware, Mass., properties last fall and previously had disposed of mills at Palmer and Bondsville.

This summer brought a report that Nashua Manufacturing Company of Nashua, N. H., has completed negotiations for lease of the Bower mill plant, with option to purchase. This is a wool blanket unit, which will round on the Nashua line.

Receivership of the Rhode Island Processing Company, cotton yarns, of Coventry, R. I., has been wound up. A petition for the receivership was made in September, four years ago. Three dividends totaling 50 per cent were made before the final settlement. After deduction of fees, a slight final dividend was to be paid.

New England has had a flagrant example of the evils of the "sit-down strike," a by-product of the new day in labor relations since the government regulation came into being. A Providence textile mill—by chance not a cotton unit—closed because thirty young women staged such a strike. As a result 300 workers were thrown out of employment. Another argument for change in the NLRB and attitude of the Administration.

Tufted Bedspread Manufacturers Association Formed

Meeting at the Hotel New Yorker the week-end of July 30, a representative group of manufacturers formed the Tufted Bedspread Manufacturers Association. O. C. Moore, Polly Prentiss, Inc., Sumter, S. C., was elected chairman of the executive committee, and W. P. Fickett was chosen acting secretary-treasurer and empowered to receive and handle funds in connection with getting the new organization underway. The need for the organization is realized when such factors as fair trade practice rules, piracy of patterns, misbranding, secret rebates, various pertinent features of the Robinson-Patman act, rules on unfair returns of merchandise, rules on consignment, and rules on labeling, are to be settled through it as agency. It was estimated that about 70 per cent of the industry (in volume) were signed up as members of the new association at the first meeting.

"THE SITUATION"

As Seen Across an Executive's Desk

August 18, 1938

IT IS A DARN HARD JOB to put down my fan, drain the last cool drops of a frozen drink, and sit down to write a piece in the midst of the worst heat wave in many years. But—with the Spirit of Optimism hanging around bragging about fall business, we have the feeling that we must give that guy a hand, humiture of 98+ notwithstanding.

The Better Business motif, found to be in evidence in early July, swelled to a real crescendo by August and the sales volume booked promised production activity for several weeks to come. Immediately following upon the bullish crop report, however, sales slackened off, and manufacturers were satisfied to let their orders on books carry them for awhile. Showing the strong tendency of the market, in all goods, despite the evident desire of most customers to bear the market down, manufacturers held off and were generally content with orders taken. In no case were evidences found where orders were taken for delivery in the far future. Raw cotton prices, after the crop report which was half a million bales more than anticipated, dropped to the point where the Government loan policy again became operative, automatically, but cotton goods prices did not follow such a drastic course down hill. In some cases tentative plans for price advancing were abandoned temporarily, but on the average there was noted no change. This certainly shows that prices are at the bottom, and there is no place for them to go but up. That they will by early fall is evident, and with the uphill price movement, business will increase. It always does. There is nothing so contagious as the hysterical feeling in the market that "prices are rising". There is then a big rush to the door to get there and buy first. The only way to avoid the crush is to stay away from the door, or find a side entrance.

The entire situation in business today, however, can be summed up in the phrase "There is a lot more buying to be done before fall".

Signs of Better Business

While prices are going no lower, shipments are increasing week by week on all types of goods from yarn to the finished product. In some cases an important symptom is being noticed: the request of immediate deliveries on forward orders. Some mills report that it is pushing them to make these deliveries on old high-priced orders without working over time. Statistics show that deliveries were stepped up the latter part of July and are consistently maintaining a higher level in comparison with production than at any time during the past 18 months.

This situation has been true in the staple goods, such as sheets and pillow cases, work clothes, grey yarns, knit goods, and market observers are beating their breasts as they loudly maintain that the market is sound. Surely it is agreed that there is a steady flow of goods from producers to consumers, and that the long empty shelves are being replenished, both at home and in the store. And, according to the AP adjusted index, three important industries close to the consuming millions throughout the country—residential building, cotton manufacturing, and electric power production—swept up, in the week of August 15, to new peaks for the year. Cotton manufacturing, for this week, came to within a fraction of duplicating the 1937 figures.

And so while we can feel optimistic about the future, let us quickly review the most constructive moves during the past month.

Cotton Promotion Research

Starting in with the raw cotton industry first: at a meeting of several hundred cotton planters and cotton merchants in Stoneville, Mississippi, in late May, a Cotton Council was organized and Oscar Johnston, head of the Delta Pine & Land Company, former director of the government Cotton Pool, was elected president. This past month an announcement program of five planks was defined:

1. Find proper and greater markets for cotton.
2. Maintain research activities for new uses.
3. Obtain favorable legislation.
4. Advertise extensively the known uses of cotton.
5. Increase foreign cotton shipments.

The last plank is the only original—the other four out of five being well worn by other organizations' intentions. New or not, if the Cotton Council can make their intentions operative, they will have accomplished more than their forerunners. The newest thing about this program is that it is sponsored by planters and shippers, who up until now have forgotten their crop once it was sold, thereby laying claim to the doubtful honor of disclaiming interest in the ultimate market of products made from their raw material. They have left it up to the manufacturer of cotton goods to promote cotton's markets and now, for the first time, show a willingness to share their portion of the load of advertising. Now that we have everyone in harness on this project we will get somewhere.

And speaking of new uses for cotton, we again face a new crop season with the cotton-bagging-for-cotton-bales storm brewing. This time something is being done about that! Use of cotton as a covering for cotton bales has been made possible under a diversion program calling for the manufacture and sale of newly developed cotton bagging material sufficient to cover one million bales. The program is designed by the AAA to meet the year by year requests of our industry that cotton for cotton bale covering be given a reasonable trial. This year, under the new program, sale of cotton bagging will be confined to one-variety or improved cotton communities in order to make possible an adequate check of the results of the program.

Under the plan manufacturers may submit offers to make and sell the specified bagging material manufactured in the United States of domestic crop cotton, to producers, gins or oil mills in one-variety or improved cotton areas, or to the bagging trade or to others for resale to such persons. Indemnity payments will be made to those whose applications and

bids are approved and who sell the bagging material at not more than 45 cents per pattern (six yards). Bids were submitted on August 12th to the AAA. It is said that a normal crop of cotton for the U. S. would require 75 million yards of cotton bagging for covering, or approximately 135,000 bales of low-grade cotton or spinnable waste.

And speaking of raw cotton, in an effort to put a stop to a racket, which it is alleged was vicious in its scope during the past season, mills are uniting in a stand to report to the Federal Trade Commission the selling of misbranded cotton by any cotton shipper, broker, agent or merchant.

To Stop Mis-Branded Cotton

Although the move was begun by the southern combed yarn spinners, since the fine goods mills were greatest sufferers last year from the selling of California cotton misbranded as Delta cotton, it is a matter which should have the co-operation of the entire cotton industry, for in the past other sections of the country have suffered from similar hoaxes.

Taking a definite stand to quash the practice, the combed yarn group issued approximately 2,000 letters to cotton shippers, the cotton shipper associations and cotton exchanges in which they state:

"Our Association has been informed, and we think reliably, that a rather large amount of California cotton was shipped to Delta points last year, stripped of California tags and re-shipped under the guise of Delta cotton to combed yarn mills at an approximate profit to the shipper of $5.00 (five dollars) per bale, and an ultimate loss to the spinner which is indeterminable, since the two crops were indistinguishable last year until the difference showed up in processing and dyeing of yarn manufactured from mixed lots. Many yarn manufacturers, as a result, have had yarn rejected from this cause at a financial loss and an additional possible loss of the goodwill of the customer.

"The members of our Association have been requested to promptly report any evidence of a continuation of this practice. The Association does not in any sense of the word desire to say or do anything prejudicial to the sale of California cotton as such, but simply desires to make certain that its members will receive Delta cotton when that cotton is purchased and paid for.

"The practice herein referred to is in direct violation of that portion of Section 5 (a) of the March 1938 Amendment to the Federal Trade Commission Act, which is as follows:

'Unfair methods of competition in commerce and unfair or deceptive acts or practices in commerce are hereby declared unlawful.'

"We have a mutual interest at stake and we propose to present to the Federal Trade Commission any evidence that we receive which may show that this practice still exists, and we urge your cooperation in an effort to put an end to this unfair and deceptive practice in commerce."

It is stated that this move has received national attention. California cotton shippers rejoice that it is underway, for they say the Memphis shippers came into their market and jumped the price on every occasion, in order to get their crop for misbranding purposes. The Delta cotton shippers, of the more reliable type, have watched the growing maverick practice, wondering just when the California shippers would see the possibilities and open sub-rosa shipping offices in the Delta to handle their own crop in this manner. The mills, both north and south, which have been burned by this practice find their losses indeterminable since it is rated not only in goods rejected because of faulty dyeing or finishing caused from inadvertently mixing irrigated and rain-watered crops but in the possible loss of goodwill of their customers.

The threatened move on the part of textile mills should such practices be evident in the future is one more reason to believe that the strongest influence in the textile industry today is the Federal Trade Commission.

Fair Trade Practice Rules

Another reason is the informally stated possibility of having to call in the FTC to sponsor and enforce fair trade practice rules on sales of yarn, unless the yarn buyers become more tractable in co-operating with the yarn manufacturers in voluntarily accepting the rules recently re-drafted and approved by the governing bodies of the yarn groups. It is pointed out that the FTC has been helpful in working with the hosiery association and the infants' and children's knit outerwear association, and others, in formulating fair trade practices, notably in labeling; that there is a "fair trade practice division" of the FTC, and that spinners will not hesitate to call upon it if necessary.

The need of a set of "rules" is not sectional but is acknowledged by manufacturers of yarn both north and south. The fact that articles have appeared in the daily papers, evidently written by distributors opposed to such adoption, trying to find fault with the rules which were drafted after months of study by a body of men noted for their ability and integrity proves that the distributors have been freely speculating with the spinner's yarn, and simply dislike being deprived of the privilege. Whether they will "accept" them is not the question. The rules are approved by the manufacturers. If they are not accepted gracefully, so say the spinners, then the screws will be put on.

And drastic as it might sound, it is all to the good. The industry has too long been demoralized by the speculative influence in the market. With that eliminated, with production balanced, with prices based on costs-plus-profit system instead of the cut-throat plan, the textile business would be the sweetest game in the world, with liberty and justice for all.

A Bit Hasty

A certain foreman was told that on account of business conditions it was absolutely necessary to keep costs down and this meant full output from every man on the job and a constant fight to eliminate waste.

The foreman studied his most recent records of output and decided to tackle the "weak sisters" one by one. To the man with the poorest output record for the past week he said a bit abruptly, "You've either got to produce or get out!"

He then reported to the superintendent what he had done.

"Did you check to see if anything was wrong with his machine?" the superintendent asked.

The foreman admitted that he had not.

"Are you sure the method he is using can't be improved upon? And, are you sure he has had full and clear instructions about the job he is now doing?" the superintendent asked.

When the superintendent raised these and several other questions, the foreman went back to his department ready to approach the problem of "weak sisters" from a new angle.

Are better results likely to be obtained by selling the idea of waste elimination to workers and winning their cooperation, or by threatening dismissal to men who waste time or material?

—"Management Information", Elliott Service Co., Inc.

COMMENT on the Cotton Market

New Orleans, August 16, 1938

AFTER RULING somewhat higher in the early part of the period under review, the cotton market was under pressure of less favorable trade advice, less activity in the goods and spot departments, uneasiness over foreign politics, a large world's carry-over of American and foreign cottons, and the Government's first crop forecast of the season indicating a larger production than generally expected. Compared with one month ago, values show a decline of about $2.50 per bale.

According to Secretary Plauche of the New Orleans Cotton Exchange, the world carry-over of American lint cotton on July 31 this year was 12,955,000 bales, comparing with 5,740,000 bales last year and 12,911,000 in 1932.

World's consumption of American lint cotton he placed at 11,177,000 bales as compared with 13,253,000 last season.

Exports for the season totaled 5,954,000 bales against 5,776,000 last season and 6,257,000 season before last.

The carry-over of cotton in the United States July 31 was figured at 11,025,000 bales against only 3,968,000 bales on July 31 last year.

Of the above carry-over the Government is credited with holding 6,964,000 bales in its loan stocks versus 1,665,000 last year, which left a total free supply exclusive of mill stocks and in transit in this country of about 2,778,000 versus 1,027,000 last year.

The Bureau of Agricultural Economics is credited with making a rough guess of the probable carry-over of foreign cottons this season at around 10,000,000 bales against about 7,000,000 last year. This estimated surplus of foreign added to the 12,955,000 surplus of American would make a total world surplus of all kinds of about 23,000,000 bales against about 12,740,000 a year ago.

These comparatives are anything but encouraging, and when added to this year's prospective crops, especially of American, weigh heavily on the market, perhaps necessitating the placing by the Government of a loan value on this year's U. S. crop.

The government's crop report as of August 1, 1938, was for an indicated crop of 11,988,000 bales, with 26,347,000 acres in cultivation July 1, 1938. The crop of 1937 was 18,946,000 bales.

A late Washington press dispatch stated in part:

"The department of agriculture revised cotton parity figures. They emerged with revised figures setting cotton parity at 15.87 cents a pound. This, they explained, would require a spot price of 8.24 cents a pound to force loans. Parity is the purchasing power of cotton relative to manufactured goods that existed in the 1909-1914 period."

As to trade prospects, general conditions are encouraging, for while commodity values are comparatively low, there is the promise of large food crops which will likely make for an active fall, and the quantity will probably offset, in part at least, the loss from lower prices, perhaps serve to increase employment which appears to be gaining as result of improvement in construction work, although much will depend on foreign political developments, especially in Europe.

Summary of Washington's Weather and Crop Report for Week Ended August 9th: "In the cotton belt temperatures averaged moderately above normal in most sections. Rainfall was frequent and substantial in most places from southern Arkansas and Louisiana eastward, but was light in the central north and over the western belt. In general there was again too much rain over most of the eastern belt, but the weather was favorable as a rule in the west."

Already, according to recent Washington advices, the agricultural adjustment administration outlined a 1939 cotton control program providing an acreage approximating the 27,500,000 acres allotted this year.

CENSUS REPORT—UNITED STATES

	Season 1937-38 (Bales)	Season 1936-37
Consumption of lint in Cotton Growing States during July	381,000	485,000
Consumption of lint in New England States during July	56,000	81,000
Consumption of lint in all other states during July	12,000	17,000
Consumption of lint in the U. S. during July	449,000	583,000
Consumption of lint in the U. S. during June	443,000	681,000
Consumption of lint in Cotton Growing States, 12 months	4,885,000	6,626,000
Consumption of lint in New England States, 12 months	714,000	1,073,000
Consumption of lint in all other states, 12 months	157,000	251,000
Consumption of lint in the U. S., 12 months	5,756,000	7,950,000
Mill stocks July 31	1,267,000	1,286,000
Stocks in public storage and warehouses July 31	9,641,000	2,813,000
Stocks in mills, public storage and warehouses July 31	10,908,000	4,099,000
Stocks in mills, public storage and warehouses June 30	11,113,000	4,639,000
Active spindles in Cotton Growing States during July	16,660,000	17,754,000
Active spindles in New England States during July	4,685,000	5,908,000
Active spindles in All Other States during July	571,000	732,000
Active spindles in the United States during July	21,916,000	24,394,000
Active spindles in the United States during June	21,144,000	24,558,000

BRITISH BOARD OF TRADE REPORT FOR JULY

	Year 1938	1937	1936
Exports of yarn, pounds	9,000,000	13,000,000	12,000,000
Exports of cloth, yards	113,000,000	177,000,000	170,000,000

AMERICAN COTTON

August 1 to July 31—bales	Season 1937-38	1936-37
Brought into sight (marketed)	13,562,000	14,371,000
Exports from U. S., including Canada	5,954,000	5,776,000
Spinners takings, world	12,013,000	14,660,000
Stock at all U. S. ports, July 31	2,452,000	1,108,000

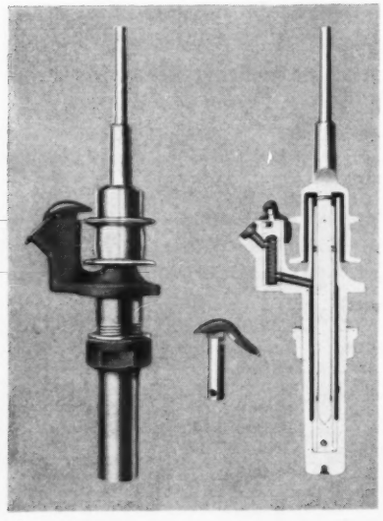
WORLD'S VISIBLE SUPPLY OF COTTON

American— August 12—	Bales This Year	Last Year
Stock at U. S. ports	2,416,000	1,161,000
Stock at 102 interior towns	2,554,000	870,000
Afloat to and at ports of Europe	1,154,000	585,000
Afloat to and at ports of the Orient	102,000	305,000
Total American	6,226,000	2,921,000
Total of other kinds	2,284,000	1,689,000
Total of all kinds	8,510,000	4,610,000

NEW TEXTILE EQUIPMENT and MATERIALS

Newly Designed Spindle Bolster Case

Whitin Machine Works, Whitinsville, Mass., has recently developed a new bolster case for spinning. The purpose of the new bolster case is to provide an air-tight oil reservoir which will permit lubrication of the spindle in



the usual manner while in operation, without disturbing the spindle, and which will at the same time overcome objections that have been made to the common bolster case. The new type retains the oil post to which the American mills are accustomed, and has the advantages of the European lift-out bolster case. The solid-type European case, according to the manufacturer, retains the oil for much longer periods than the customary bolster case having an oil snout, due to its being air tight, with no means for the air to enter except around the top of the bolster. The new case combines the advantages of both designs, and it also eliminates the disadvantage of having to lift the spindle for oiling, which is necessary with the solid-type case. To fill the reservoir with oil, the doffer latch is lifted and given a quarter turn, thus opening the passage for the oil into the case. A rotatable valve member in the oil post provides for air-tight sealing of the oil supply passage while the spindle is running.

◆

New Floor Treatment

The Truscon Laboratories, Detroit, Mich., have developed a new system of coloring and dust-proofing material for cement floors that is said to be different from any product made. Termed Flor-Dye, it is said to penetrate or work its way into the cement surface, coloring uniformly and becoming fixed as an integral part of the concrete. Thus, it is explained, it not only colors, but also binds the particles into a more wear-resistant, compact whole, insuring a clean floor which will not dust, which will not absorb stains, and which is easily mopped and kept clean Because Flor-Dye system of coloring concrete is non-oil absorbent, it is practical for use where oil drippings or other staining materials are apt to smear the concrete and cause staining of the surface. It is both weather and sun-resistant. Also, the product may be used on absorbent tile.

◆

Eye Comfort Emphasized By New Benjamin Lighting Unit

Benjamin Electric Mfg. Co., Des Plaines, Illinois, has placed on the market a new lighting reflector specifically designed to utilize the indirect lighting characteristics of the silvered bowl mazda lamp.

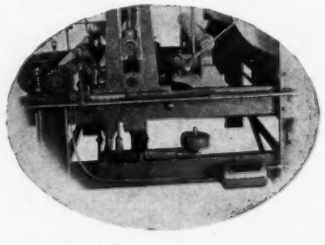
Known as the Benjamin RLM "Silvered Bowl" Diffuser, the new unit makes more effective use of the silvered bowl lamp by a distinctive innovation in diffuser design. Through the proper combination of porcelain enamel and Alzak aluminum reflecting surfaces and the use of the silvered bowl lamp, a softer, better diffused illumination is secured without sacrificing high lighting efficiency.

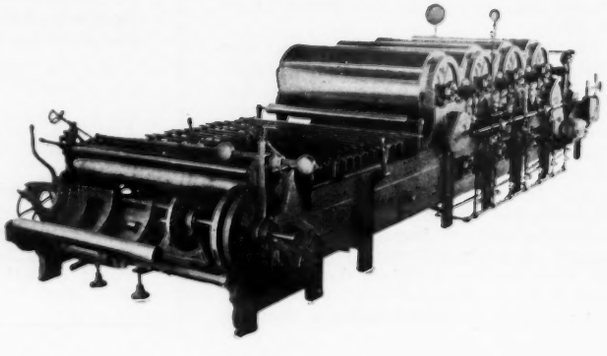
The three essential elements in the new Benjamin "Silvered Bowl" Diffuser are the silvered bowl lamp and the porcelain enamel reflecting surface with a semi-specular Alzak aluminum reflector insert. The Alzak aluminum reflector is located in the top of the unit and re-directs the light from the silvered bowl lamp downward and outward in a manner which avoids interception of the light rays by the lower edge of the porcelain enamel reflector.

In this new Benjamin unit, the silvered bowl lamp produces a broader candlepower distribution with the minimum of direct or indirect glare.

Special Model Warp Sizer

Charles B. Johnson, Paterson, N. J., has built a special model 7-cylinder rayon warp sizer, which is at present operating in an important New England mill. It was developed with the thought in mind of having closer steps in control of stretch and some way to tell how much and how even a stretch is being imparted to the yarn. The seven cylinders are 30 inches in diameter, which gives the same drying area as on a 9-cylinder machine, and are made of stainless steel with heavy steel heads. Graduations of stretch control are both positive and infinite. A PIV drive between the quetsch and the first drying cylinder permits the operator to increase or decrease stretch smoothly. Another PIV drive set between the last cylinder and the draw rolls gives equally smooth control of stretch at this point. The drives are controlled by micrometer reading dials which can be adjusted instantly to select the percentage of stretch required for each warp. A stretch indicator shows the exact amount of stretch occurring as the warp passes through the machine.





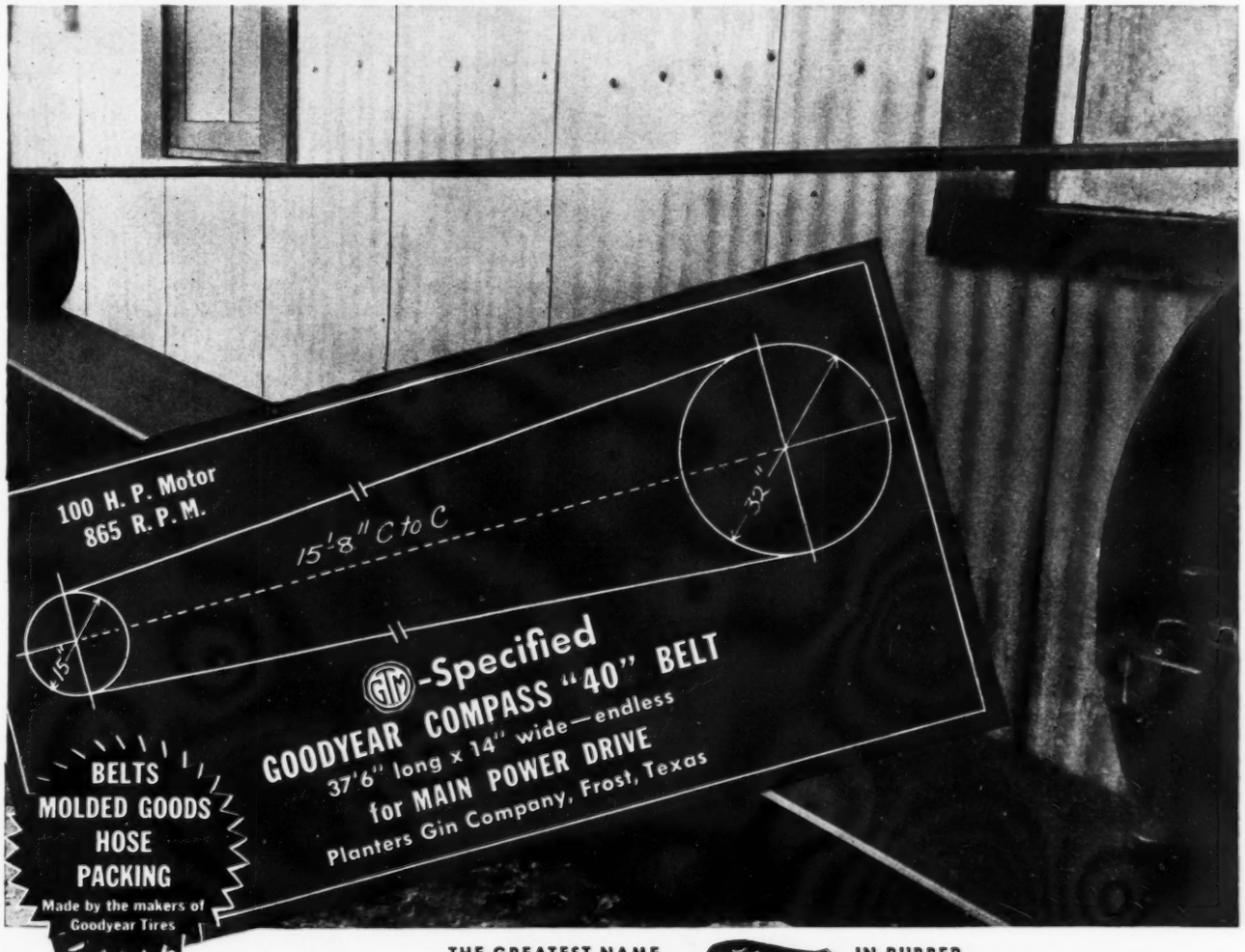
STRETCH TAKES A HOLIDAY

BELT-STRETCH used to be a constant irritation on the main power drive of the Planters Gin Company, Frost, Texas. It didn't seem to make any difference what kind of belt they used—several times during the busy ginning season the drive would have to be shut down while the belt was respliced to take out stretch.

Two years ago last May they told their troubles to the G.T.M.—Goodyear Technical Man—and on his recommendation a Goodyear COMPASS "40" endless belt was put on.

One take-up in two years

From that minute stretch took a holiday. In the last three ginning seasons the Goodyear COMPASS has required only one take-up on the motor. *There has not been a single shut-down for belt trouble!* Goodyear COMPASS Belting will give you the same splendid service on your hard-pull drives because its patented endless cord construction is the most nearly *stretchless* obtainable. That has been proved by countless records like the above. To bring the G.T.M. to your office for a friendly discussion of your belting difficulties, write Goodyear, Akron, Ohio, or Los Angeles, California—or call the nearest Goodyear Mechanical Goods Distributor.

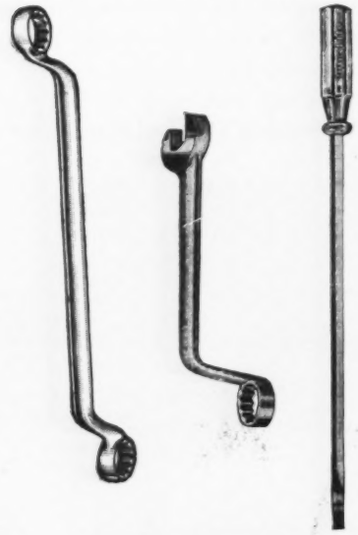


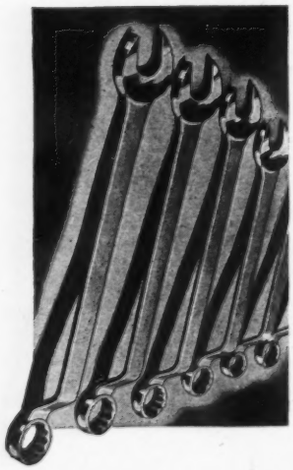
THE GREATEST NAME IN RUBBER

GOODYEAR

Textile Tools

The Duro Metal Products Company, 2649 N. Kildare Ave., Chicago, Ill., have made available a number of new tools for the textile industry. Among these are the new combination box open end wrenches, especially designed by a textile mill superintendent. They have the same openings on both ends, one being an open end wrench with an extra long handle, the other being an offset box wrench which allows work in close quarters. The new loom fixers' handy box wrench is made from drop-forged chrome vanadium steel heavily plated, coming in two sizes, one for Draper looms and the other for C & K looms. The No. 2250 special offset and box wrench for Draper looms has a





Upper left, handy box wrench for loom fixers; Upper center, Draper loom wrench; Upper right, race plate screwdriver; lower photo, combination box and open end wrenches having same opening on both ends.

12-point opening in the box end of the wrench so the operator may use it at close quarters. The cylinder setscrew wrench is a new type which may be used either on the old style or new style cylinder setscrews that must be adjusted frequently in the card room. The screwdriver is a special Duro Lite extra long one for Draper race plates. The handle gives extra leverage. The double end box wrench is especially useful to engineers on steam lines. A totetray has also been designed for textile mills, made of steel and finished with baked gray enamel.

◆

Annual Cotton Handbook

Comtelburo, Limited, 11 Tokenhouse Yard, London, E. C. 2, has published the 68th Annual Cotton Handbook for daily cable records of American, East Indian, Egyptian, Sudan, and other crops, together with Liverpool, Manchester, Continental, Brazilian, and other statistics. Price of the cloth-bound book is one dollar.

◆

Pipe Joint Compound

Rockwood Sprinkler Company, 38 Harlow St., Worcester, Mass., has developed a pipe joint compound recommended for service on all threaded joints or gaskets on hot and cold water, gas, steam, compressed air, and vacuum lines. It is said to lubricate threads while pipe joint is being made up, makes tight metal-to-metal joint, the surface hardens into protective skin which eliminates oil drops when compound is properly applied, seals without cementing, is ready for instant use without thinning, maintains solid matter in compound in suspension, cannot injure the skin, and will not taint nor discolor drinking water.

◆

Floor Protective Wheels

Lewis-Shepard Sales Corp., 245 Walnut St., Watertown, Boston, Mass., have made available Celoron floor protective wheels, which are said to be engineered to give superior performance and cut floor damage. They are made of mascerated cotton duck impregnated with Celoron phenolic resin and molded to final shape under tremendous pressure. Large hub accommodates large bore without sacrificing strength. The face of the wheel is slightly crowned to give easiest rolling and steering, an exclusive feature. The light weight and design make all trucks roll quieter and easier even when heavily loaded. When caustic liquors are to be used in processing, the wheels may be furnished with bonded alkali resistant resin.

◆

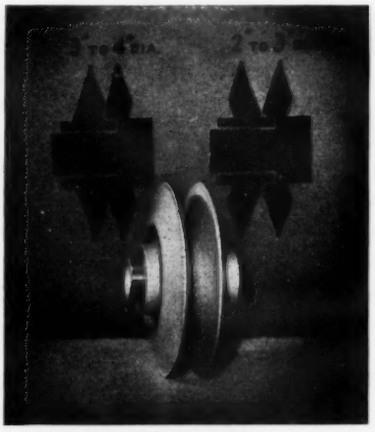
Alumina Water Conditioner

The Brooks Oil Company, Cleveland, O., has developed an alumina water conditioner for individual treatment for high and low pressure boilers. An alkaline coagulant solution picks up the mineral salts, scale forming matter, etc., resulting in the formation of a "floc" considerable of which will pass through the blow-off and the remainder is carried in suspension and easily removed at washout periods.

◆

Adjustable Texsteel Sheave

Allis-Chalmers Manufacturing Co., Milwaukee, Wis., Texrope Division, has developed a combination sheave for double duty which has a range of



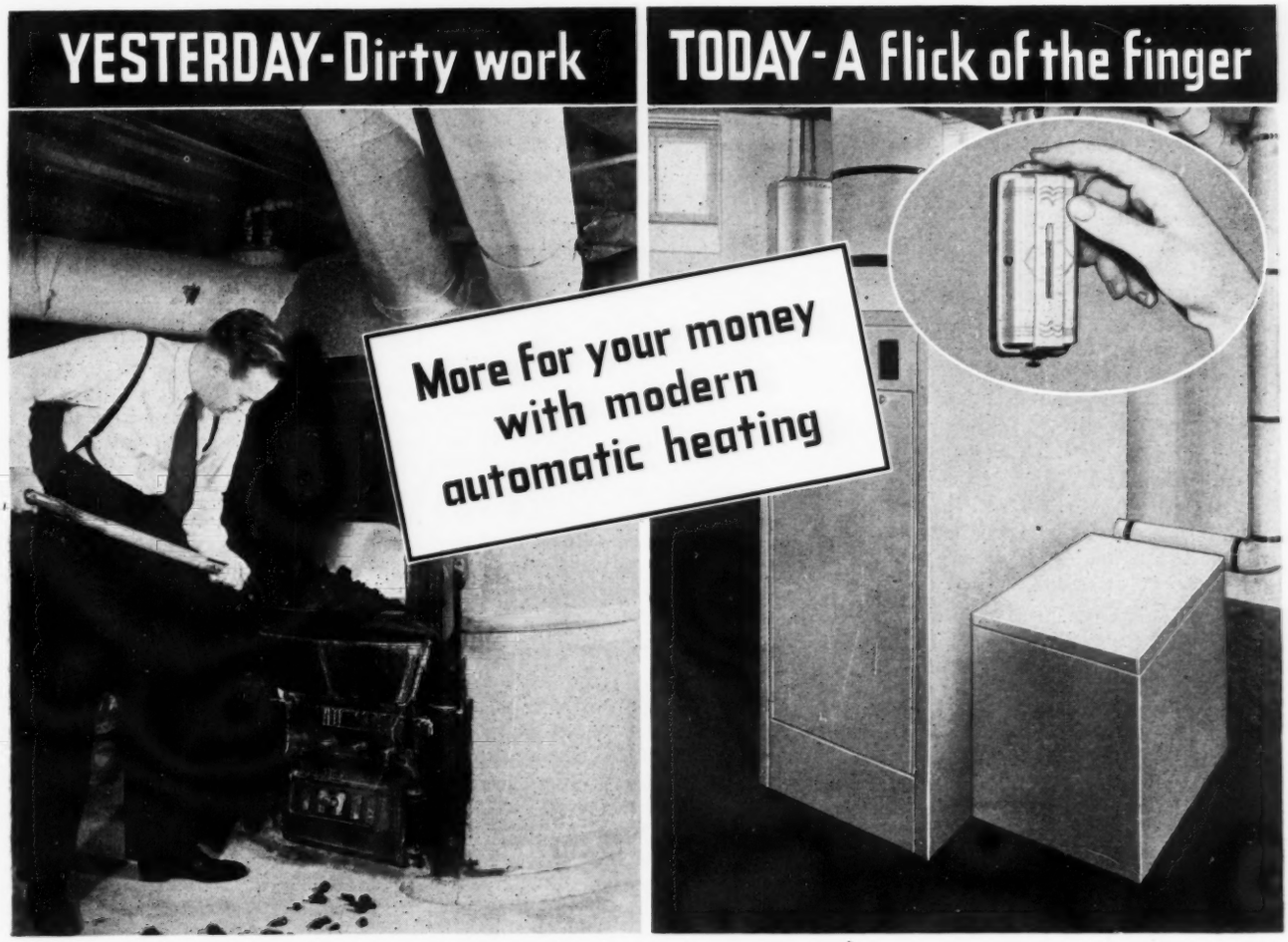
Adjustable Sheave

pitch diameter varying from 2 inches to 3 inches, and from 3 inches to 4 inches by merely removing the adjustable plate, reversing and again placing on the hub. The outer plate in position allows the texrope belts to ride high and give a pitch diameter anywhere from 3 to 4 inches; the outer plate reversed allows the belts to ride low and give a pitch diameter anywhere from 2 to 3 inches. The two together provide for a speed variation of 100 per cent.

◆

New Cones for Roving Frames

Whitin Machine Works, Whitinsville, Mass., has recently introduced the new patented Martin outline bottom cones for use on Woonsocket and Whitin-Woonsocket roving frames, which may be substituted for standard bottom cones now in use on the above-named frames. These cones were developed by Fay H. Martin, who for some time has been working in conjunction with the company on this project. According to the company, the new patented Martin outline bottom cone is the answer to the problem of making good roving with an even, controlled tension for every layer on the bobbin. In replacing the old cones with the new ones, it is necessary only to replace the bottom cone, no other parts being required. Mr. Martin, who developed the cones, has written many articles for COTTON on both the theory and practical side of the subjects concerning roving frames, and is recognized widely as an authority on the subject.



—and you get more for your money today with the modern roll covering— CORK

IT hasn't been long since automatic furnaces were perfected. But already about 17 per cent of all homes are enjoying the greater comfort and convenience of modern automatic heating. It has been only fourteen years since the first Armstrong Seamless Cork Cot was introduced to the textile industry. But already more than 25 per cent of all active spindles are running with greater efficiency at lower cost on this modern roll covering.

Armstrong's Cork Cots cost no more than other roll covering materials. They last longer because their service life is renewed —again and again—by rebuffing. And they bring you extra savings in lower assembly costs.

Precision manufacture by Armstrong takes cork, ideally fitted by nature for the purpose, and fabricates an absolutely uniform cork cot, uniform from end to end and throughout its entire wall thickness. With every cot exactly alike, Armstrong's Cork Cots deliver a stronger, more even quality yarn.

With Armstrong's Cork Cots you'll benefit from better running work. There's less eyebrowing and end breakage. There's less clearer waste and fewer top roll laps. Cots are less affected by hard ends.

Find out now how your mill can benefit by a change-over to the modern roll covering — Armstrong's Seamless Cork Cots. Let an Armstrong representative show you production figures of mills spinning your range of numbers on cork. Or write to Armstrong Cork Products Company, Industrial Division, Textile Products Section, Lancaster, Pa.

ARMSTRONG'S *Extra Cushion* SEAMLESS CORK COTS

CORK PRODUCTS SINCE 1860

Galvanized Roofing

The American Rolling Mill Company, Middletown, Ohio, has announced a new kind of galvanized roofing with a patented spring pressure lap and other exclusive features, known as "Armco Galvanized Seal-Krimp" roofing. It is said to be storm-proof, weather-tight, and easily installed. The new roofing is available in three grades of metal—copper-bearing steel, open-hearth steel, and Armco ingot iron. When it is placed in position and nailed down, the sections are held firmly together with spring tension at three points; drainage channels and siphon breakers are built-in features.

◆

Book on Tax Law

Prentice-Hall, Inc., 70 Fifth Ave., New York City, has published information as to how the taxpayer may avoid the payment of unnecessary taxes in "Federal Tax Law" which also has an explanatory digest of the revenue act of 1938. The book contains the text of the law verbatim together with an explanatory summing up of the various changes in the law and their effect upon taxable income. The business man, the lawyer, the accountant, and others who deal with tax matters will find the booklet extremely valuable as a quick and accurate guide. The price is one dollar.

◆

Fluorescent Tube Lighting Fixture

Barkon-Frink Tube Lighting Corporation, 23-10 Bridge Plaza South, Long Island City, N. Y., has made available a fluorescent tube fixture for color examination and general inspection work. It utilizes three 24-inch daylight fluorescent tubes which closely approach average daylight in quality. The fixture can also be supplied with white fluorescent tubes, giving off a light similar to that of regular incandescent lamps. They can be operated on single-phase, 110-volt, 60-cycle supply or on three-phase, 220-volt, 60-cycle supply. The fixtures are designed for multiple hanging where large areas are to be lighted.

◆

Single Stage, Side Suction, Centrifugal Pump

Lawrence Pump & Engine Co., Lawrence, Mass., has developed a new single stage, side suction centrifugal pump type "HBD". It is a rugged and heavy duty machine for industrial pumping, with capacities from 10 to 15,000 gallons per minute and sizes from 1½-inch to 18-inch discharge. The impeller is the enclosed type with removable suction head. The pump is described in literature made available by the company.

New Thermal Plug Fuse

The Trico Fuse Manufacturing Company, 5th St., at Chambers, Milwaukee, Wis., has made available its new Trico-Matic thermal time-lag fuse, to which has been added a built-in thermal overload cut-out. This thermal cut-out holds starting and momentary overloads, yet gives safe and dependable protection on prolonged overloads, making overfusing unnecessary.

◆

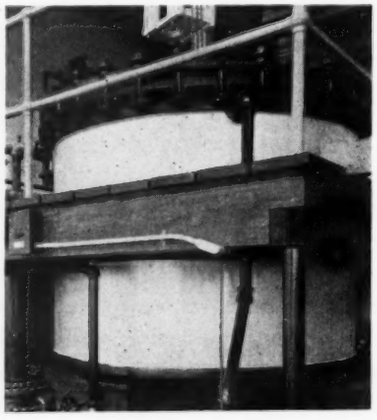
Dyestuff Announced

E. I. DuPont de Nemours & Company, Inc., Dyestuffs Division, Wilmington, Del., has announced Pontamine Fast Orange MRL, a direct color with good penetration and excellent solubility. It is dyed on cotton like other level dyeing direct colors. The new color is said to be well adapted to machine dyeing. It is not recommended for application to rayon, pure silk, or tin-weighted silk.

◆

Abopon Special

Glyco Products Co., Inc., 148 LaFayette St., New York City, which some time ago introduced Abopon for flameproofing textiles, has now developed a dry material termed Abopon Special, said to have come about through the stringent requirements set up by users in the airplane, steamship, and railway fields. Though this material is not waterproof, it dissolves but slowly when exposed to rain. Where permanent waterproofness is necessary, users first apply it to the material to be flameproofed and allow it to dry, then coat it with a waterproofing lacquer or varnish which adheres firmly to the flameproof coating.



This is one of two kiers recently installed in the Geo. C. Moore Company plant at Westerly, R. I., used for boiling out yarns. They are 8 feet in diameter and 6 feet deep. Each holds 4,000 pounds of yarn in a single boil. For the lining, fabricator Wm. Allen & Sons Co., Worcester, Mass., used Enduro Stainless steel, a product of Republic Steel Corporation, Cleveland, O.

Harry W. Butterworth Passes

Harry W. Butterworth, Sr., president until 1929 and later chairman of the board of directors of H. W. Butterworth and Sons Company, Philadelphia, pioneer makers of textile finishing machinery in United States, died August 3 at Rydal, Pa. He would have been 75 years of age August 8. Pneumonia was the immediate cause of his death.

Mr. Butterworth is credited with being the father of the textile finishing industry in the South, in that he was the first man in his line to actually cultivate the South with the idea of having the mills do their own dyeing, bleaching, and finishing. It was only after years of effort that he sold the first warp dyeing machine in Alamance County, N. C. From then on, the South developed rapidly in the finishing of its fabrics.

Mr. Butterworth was born August 8, 1863, in Philadelphia, the son of James Butterworth, then president of the company, and became identified with the business which he was afterward to head, in 1882. In 1889 he was secretary, and became president in January 1907. This post he held until December 1928, when he retired to become chairman of the Board of Directors. At that time, his brother, Albert W. Butterworth became president, but died in December 1935. Harry W. Butterworth, Jr., is now president of the company which dates back to 1820.

Mr. Butterworth is survived by five children, Harry W. Butterworth, Jr., president of the company, James Butterworth 2nd, De Haven Butterworth, Mrs. Lewis Craig Dick, and Mrs. John H. S. Spencer, all of Philadelphia. J. Ebert Butterworth, his nephew, is vice-president of the company.

Dr. Charles Holmes Herty, widely known chemist, passed away July 27 in Savannah, Ga., at the age of 71. He evolved the method of making paper pulp from southern slash pine and black gumwood, and was active in the Chemical Foundation and the American Chemical Society. Dr. Herty was greatly interested in textile chemistry.

Robert Bost Knox, 62, textile chemist of Newton, N. C., and an executive of the City Cotton Mills, passed away the middle of July.

Ike R. Ballard, for a number of years superintendent of the National Yarn Mills, Belmont, N. C., passed away August 1 after several weeks illness.

A. J. Rose, 76, retired textile mill executive of Selma, N. C., passed away early in August.

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It provides additional *cash* working capital with which you can substantially decrease your debts.

It enables you to reach many new and highly profitable merchandising opportunities. Moreover it removes all the uncertainty of credit risks and relieves you of all credit losses.

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TEXTILE BANKING COMPANY

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Affiliated with Commercial Credit Company, Baltimore • Capital and Surplus Over $65,000,000

NEW ENGLAND REPRESENTATIVE: EDMUND H. LELAND, CHAMBER OF COMMERCE BUILDING, BOSTON, MASS.

TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . .

Carl Moore Joins Howard Brothers

Carl M. Moore has become associated with Howard Bros. Mfg. Co., of Worcester, Mass., as sales representative in the Carolinas territory with headquarters in Monroe, N. C. Mr. Moore, who has been superintendent of the Piedmont (S. C.) Manufacturing Co., and previously agent of the West Boylston Mfg. Co., Montgomery, Ala., has had an extensive practical and executive mill experience and is widely acquainted throughout the industry. Guy L. Melchor continues as southern agent of Howard Bros. Mfg. Company, in charge of all southern activities, with headquarters in Atlanta, and J. Floyd Childs is sales representative for the company in the Georgia-Alabama-Tennessee territory.

◆

Addition to Norma-Hoffmann Plant

Norma-Hoffmann Bearings Corporation, Stamford, Conn., due to an increasing demand for its ball, roller, and thrust bearings, has completed an extension to its present buildings and has placed substantial orders for new machine tool equipment.

◆

Clarke of Armstrong Cork Passes

Hugh M. Clarke, first vice-president of the Armstrong Cork Company, Lancaster, Pa., passed away July 26 following an illness of several months. With the exception of his service in the World War as captain in the field artillery, he was continuously connected with the Armstrong organization from 1913 until his death. He was always active in the business and civic affairs of the community.

◆

Roane Represents Abbott

S. A. Roane, formerly representative of J. S. Fallow Company and Waltham Watch Company, has become a member of the southern sales force of Abbott Machine Company, Wilton, N. H., and is making his headquarters in Greenville, S. C.

◆

Dieck with Haas-Miller

Fred W. Dieck, formerly associated with the Susquehanna Silk Mills, Sunbury, Pa., for 25 years, has been appointed representative of the Haas-Miller Corporation, 4th & Bristol Sts., Philadelphia, Pa., to contact the rayon and silk throwsters. Mr. Dieck will also introduce and demonstrate several new products.

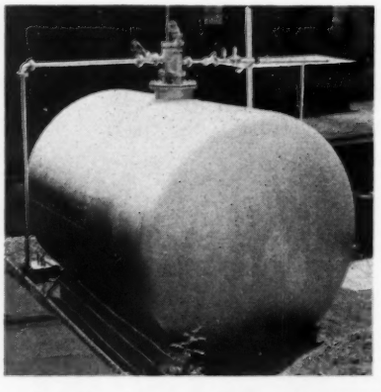
Alexander Brothers Adds to Laboratory

Alexander Brothers, Inc., 406 N. Third St., Philadelphia, Pa., manufacturers of leather belting, packings, and transmission belts, have recently installed a motor and generator and dynamometer machine, making the already modern laboratory one of the most complete to date. The laboratory is used to direct the improvement of the company's manufacturing processes. Other testing devices include those for testing for adhesion, the efficiency of cemented laps, the elongation and tensile strength of belting leather, and to determine the pounds pull needed to separate the plies of double belt.

◆

Changes in Hewitt Rubber Corp.

Several changes in the executive personnel of the Hewitt Rubber Corporation, Buffalo, N. Y., have been announced. Joseph H. Hayden, secretary, has been elected a member of the board of directors. William S. Carleton, New York City, and Lester D. Bigelow, Chicago, have been elected vice-presidents. Mr. Carleton has been with the company for 18 years and has been manager of the eastern division since 1928. Mr. Bigelow joined the company in 1932 and has been western manager.



This tank is used by the Rock Hill (S. C.) Printing & Finishing Co., to store acetic acid. It has proven more economical than the storing of the acid in barrels or bottles, and now the company has installed a complete storage and distribution system to handle the acetic acid requirements. It consists of a 10,000-gallon storage tank lined with 3/16-inch Super-Flexite rubber and 645 feet of rubber lined pipe, supplied by The B. F. Goodrich Company, Akron, Ohio.

Study of Work Experience in Philadelphia Area Concerning Loom Fixers and Weavers

The Works Progress Administration in co-operation with the Industrial Research Department of the Wharton School of Finance and Commerce, University of Pennsylvania, Philadelphia, Pa., has published a report entitled "Ten Years of Work Experience of Philadelphia Weavers and Loom Fixers", data for which were collected under the direction of Gladys L. Palmer, economist in charge. The report is concerned primarily with the work experience of a sample of Philadelphia weavers and loom fixers who represented a cross section of the local labor supply in these occupations in 1936. The average age of those studied was 45. Information gathered pointed to the fact that the outlook for an increase in textile production in Philadelphia sufficient to absorb the unemployed weavers and loom fixers is extremely slim. The study was confined to those operatives engaged or formerly engaged in the woolen and worsted, carpet and rug, and upholstery goods industries, which industries have been declining in the studied area since 1920. Almost 7 per cent of the workers reported more than 60 months of unemployment during the 10 years of 1926-35. One-fifth of those unemployed in May 1936 had been unemployed continuously for more than five years, but it is significant that indications showed that such technological changes as have been introduced in the three Philadelphia textile industries studied had little direct effect on the employment of weavers and loom fixers in that area, even though the technology available to these industries has improved considerably during the past 25 years. It is further pointed out that there has been a much more serious decline in Philadelphia than in the United States in general and that during the past 20 or 25 years *industrial activity in all of these industries has shifted to other geographical areas.* A touch of pathos is brought out in the study—even those operatives who have not had their jobs in over 10 years still consider weaving and fixing as their usual occupation, one tragically referring to it as "a trade that gets into you".

◆

Stromberg Electric Moves Southeastern Division Office

Stromberg Electric Company, Chicago, Ill., manufacturers of time recording systems, has moved its southeastern divisional headquarters from Charlotte, N. C., to 406 Walton Building, Atlanta, Ga. J. Read Abrams, district manager for this company, will join S. S. Dewson in the Atlanta office.

What's Good Enough for Him is Good Enough for Me!

"The Esquimaux wear leather garments and the leather remains soft and pliable even when the temperature is many degrees below zero. Therefore I naturally turn to leather,—good leather,—when I want a roll covering that will retain its cushion and resiliency even over the week end in winter."

So says the Gill spinner roll man and so in effect say many leading mill superintendents who have tried all the leather substitutes and found them wanting in one or more respects.

Good leather, like GILLEATHER, is the only roll covering that can consistently pass the 12 POINT TEST with a 100% rating and its performance on all 12 points (not the life of a roll covering) that determines roll covering cost.

GILLEATHER makes GOOD yarn as long as it lasts.

GILL LEATHER COMPANY, SALEM, MASS.

THE 12 POINT TEST

1. Does it automatically stop spinning when it makes bad yarn?
2. Does it retain its cushion and resiliency in low temperatures, as over the week-end in winter and as long as it will draft?
3. Does it resist flattening or fluting over the week-end?
4. Does it require a standard diameter arbor, thus eliminating costly changes?
5. Is it impervious to excessive humidity?
6. Does it produce a minimum of eyebrows?
7. Does it eliminate lap-ups as long as it will make good yarn?
8. Does it eliminate cockled yarn, other factors being correct?
9. Does it produce yarn of maximum strength for a given staple, other factors being correct?
10. Does it require a minimum of attention?
11. Does it function properly ALL the time until worn out?
12. Has time proved it any better than the 600 odd "improved" roller coverings that have come and gone?

SHEEP and CALF SKIN
GILLEATHER *for* TOP ROLLS

Southern Representatives

Gastonia, N. C.—W. G. Hammer
Greenville, S. C.—Ralph Gossett
Greenville, S. C.—W. J. Moore
Dallas, Texas—Russell A Singleton
Griffin, Ga.—Belton C. Plowden

Carolina Yarn Association Holds Annual Get-Together October 28 and 29

The Carolina Yarn Association will, on the dates of October 28th and 29th, give its annual get-together at Pinehurst, N. C., with headquarters at Carolina Inn. The golf tournament will be under direction of W. T. (Buck) Cheatham. Play will be over thirty-six holes, eighteen on each of two courses, with prizes going to seventy or more winners. If desired, entrants may play eighteen holes each day, or entire thirty-six during one day. Entertainment will be under supervision of Ray Weaver, who promises many surprises. The skeet shoot will be in charge of Joe Mason, who will have nice prizes for the winners. The annual banquet will be held Saturday night, the 29th, during which winners of golf and skeet will be presented their prizes. The Association is looking forward to the largest attendance ever, and assures each guest he will have a most enjoyable time. Attendance will be by invitation only.

◆

Troubles in "Canaan"

The following letter was published in the July issue of "The Textile Tattler", official organ of the American Association of Textile Technologists. It was written by J. J. Reutlinger, the first president of the Association, who is now located in Peru. It is interesting in that it gives facts about business conditions in South America, showing that troubles are even prevalent in the reputed lands of textile "milk and honey".

"Business conditions are just about as bad in Peru as in the United States. We have been laboring under similar conditions with overproduction, which of course created lower prices. The past year, for instance, we ran two shifts until the middle of December, and then could not get rid of the merchandise during the good summer months. Therefore, in the middle of the good season we cut production to one shift. Then things happened. The country, which depends on a good cotton crop as well as a good wool crop, suffered from a dry summer. When the farmers do not earn much money, business takes a nosedive.

"At the end of the summer season everybody here was left with considerable stock on hand, so price competition set in, bringing crepe de chines, piques, and satins to below manufacturing cost. Since there are only a dozen manufacturers in this country, we brought the crowd together and pointed out the folly of the procedure followed in the past. We then laid out a program for the future for curtailed production. Then we influenced the Government to pass a law prohibiting importation into Peru of looms and general weaving machinery for the period of one year.

"Furthermore, these manufacturers agreed on prices for standard goods whereby none is permitted to sell below a certain price level insuring a small profit. So you see, we are trying to work constructively here. We think manufacturers in the States could profit by cutting out night shifts also.

"We have had considerable experience during the past year with labor and social laws as they affect the textile mills. We have inaugurated a price scale for weaving wages, which has been accepted by the unions as well as the Department of Labor. It has eliminated much dissatisfaction amongst the laboring class and has saved me much annoyance bartering for prices whenever a new quality is put on the looms."

◆

Patent Granted

According to Paul B. Eaton, patent attorney, Charlotte, N. C., Norfleet C. Petrea, Mount Pleasant, N. C., received a patent on a bottom roll clearer for spinning frames, drawing frames, and roving frames; a mechanism is attached to the frame and has a spring pressed lever for receiving on its front and clearer board. The device is said to eliminate the necessity for weighted levers and provides a compact structure which is encased and free from flying lint.

◆

Heiser Research Director on Health for Manufacturers Assn.

Dr. Victor G. Heiser, former director of health of the Philippine Islands, and author of *An American Doctor's Odyssey*, has been appointed research director of the National Association of Manufacturers committee on healthful working conditions. This committee was created with the hope of bringing about a wider extension of medical service for American workers, according to C. M. Chester, chairman of the Association's executive committee. Dr. Heiser announced that an advisory committee of experts in the field of healthful conditions would be selected from various companies and would work in conjunction with the committee on healthful working conditions.

◆

Danley Heads New Westinghouse Air Conditioning Department

P. Y. Danley has been named as the manager of the air conditioning department of the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., with S. F. Myers as his assistant. The air conditfoning department has been reorganized and now has as its headquarters the company's East Springfield Massachusetts plant. Mr. Myers will be located in Chicago. The new department will function as a separate organization.

◆

"The Textile Tattler"

"The Textile Tattler" is the name of the new organ of the American Association of Textile Technologists, which publication was begun in July, and which will appear regularly hereafter It will carry such news of interest to the Association, announcements, and reports of meetings. Its origin was to fill a distinct need for a medium which would give life and continuity to the organization between meetings. The first issue carries an announcement of the fall meeting, a message from the president, report on the school for training technologists in New York, the employment committee, news items, and a letter from a past president of the Association who is now located in Peru.

◆

New Plant for Emmons

Emmons Loom Harness Company, Lawrence, Mass., has opened a new plant in Charlotte, N. C., to be known as Emmons Charlotte Division. The new plant will be manned by the same personnel formerly employed by the Reed Department of the Charlotte Manufacturing Company. The latter company will continue to make card clothing and will expand their business in that line. The new division of Emmons will stock the company's steel heddles, cotton harness and other loom equipment, including their new tubular aluminum heddle frames. George Bahan will continue as district representative, while George Field will be plant manager.

◆

New Speedway Drill Used by Industrials

Speedway Manufacturing Company, formerly Electro-Magnetic Tool Company, 1834 S. 52nd Ave., Cicero, Ill., has made available the new SpeedWay No. 250 home drill and grinder kit, consisting of a miniature ¼-inch drill, a hand grinder, and 5 accessories. Toy-like in size, weight and price, and finished in non-industrial colorful blue crackle enamel, these new tools were designed for home use, but according to the manufacturer, many industrial companies insist on using them, with reported satisfaction. The drill is about the size and weight of a small pocket revolver and handles with much the same ease and accuracy. It operates at 1000 r.p.m. and is rated for ¼-inch steel.

What the New Wage-Hour Law means to the Textile Industry

How to protect yourself against losses which may occur through unintentional violations

THE new Wage-Hour Law, which goes into effect October 24, 1938*, increases your cost of doing business. It puts a ceiling on hours and a floor under wages. It demands proof, through dependable, accurate records, that you have complied with its provisions.

Briefly, here is the least the law requires of you:

You must not work your employes more than 44 hours a week.

You must pay them at least 30c an hour.

You must pay time-and-a-half for overtime.

You must keep records accurate enough to prove to the government (and to guard against complaints by employes) that you have complied in full with the law.

The only sure way to keep these records, the only real protection against the heavy penalties prescribed by the law, is to install time recorders. Thus you substitute the unquestioned authority of mechanical time-keeping for methods which depend on the human element.

The time recorder's accurate, mechanical summary of an employe's work is the one kind of record that is defensible in a court of law. It is always fair to you and to your employes alike. It proves to any investigator whether you are operating within the law.

You Save Money in the Face of Rising Costs

Time recorders will save you money as well as protect you. Shorter hours and a higher wage scale mean that you will pay more for labor; you must know exactly how much you get. Consider, for example, the heavy penalty you will have to pay for lack of proof, should your employes claim more overtime than they actually work.

No business can afford such leaks, yet they are present wherever old-fashioned time-keeping methods are still used. Time recorders have proved they can plug these leaks. That is why they are in general use in almost all of the nation's greatest industries. Properly used, they do result in increased productive hours. They show you definitely which workers are shirking.

Let the Stromberg Electric Company, the leader in its field, show you how to secure the full advantages of a time recording system. Thirty years experience on all kinds of payroll problems qualifies Stromberg to advise you how to stop expensive labor losses and meet all legal requirements. Time is short, between now and October 24, to take advantage of our practical aid.

Send for Free Booklet

Our new booklet "Solving Your Payroll Problems" is now on the press. It tells how to comply with federal and state legislation and outlines methods by which you can reduce payroll costs. Mail the coupon today—we will reserve a copy for you. No obligation, of course.

THE STROMBERG UNI-SPEED RECORDER

This rugged, fully automatic Time Recorder meets the requirements of your business, no matter how complicated the hours or work shifts. Lightning-fast one-hand operation, minimum maintenance cost. Shows time irregularities in red ink if desired.

*The law is actually in effect now, since it is retroactive on interstate shipments of your Oct. 24 inventories. Don't wait until the deadline to make your plans—technically, you may be violating the law now!

STROMBERG ELECTRIC COMPANY, DEPT. C-1
223 West Erie Street, Chicago, Ill.

Gentlemen:

Please send me, without obligation, a copy of your new payroll study . . . Please have your representative call on me. . . .

Name..... *Company*.....

Position..... *Address*.....

City..... *State*.....

Link-Belt Promotes Bond and Dyson

William W. Bond has been appointed western sales manager of the positive drive division of the Link-Belt Company, 307 N. Michigan Ave., Chicago, and will have his headquarters

Mr. Dyson

Mr. Bond

at the Dodge plant in Indianapolis. He succeeds the late G. Howard Burkholder. Ralph S. Dyson, for many years manager of stock silent and roller chain drives through distributors, will also head up the roller chain sales to duplicate machinery manufacturers.

◆

Meaning of FTC Shrinkage Rules

It is the unofficial ruling of the Federal Trade Commission that the trade practice rules promulgated June 30 covering the shrinkage of woven cotton yarn goods apply with the same force to garments of all kinds to which are attached shrinkage labels—unofficial in that to date no test case has been brought for an official ruling. Observers, however, are certain such will be the case inasmuch as the general purpose of the rules is to provide for the elimination and prevention of misrepresentation, deception, and unfair methods of practices concerning the pre-shrunk character or residual shrinkage of woven cotton merchandise. According to the Daily News Record, "It all gets down to the basis of using judgment and common sense. If a manufacturer sees fit for trade purposes to declare on a label that his commodity has gone through a shrinkage process, as provided for in Rule Three of the trade practice rules, then that manufacturer must be in a position to defend his contention if and when it be challenged. If a manufacturer of shirts, or a manufacturer of cotton garments, desires to place on his product a label that sets forth shrinkage representation, then that manufacturer must also be in a position likewise to defend his statement should it be challenged and proof demanded as to the truthfulness of it. The same position would obtain if the shrinkage rules had never been adopted because the laws administered by the Federal Trade Commission apply to all commodities with equal force in so far as misrepresentation, deception, and unfair methods of practices are concerned."

It seems to be like the old story of paying taxes to have laws passed and enforced, but wondering how they could be "loopholed" so that they do not apply to us, when trying not to apply the rules to garments as well as piece goods.

What the Southern Mills are Doing

A contract has been let by American Viscose Corporation to build another viscose process rayon staple fiber plant at Nitro, W. Va., which will double the amount of staple fiber made at that plant. It is reported that work is progressing nicely at the first plant and all machinery is expected to be installed by the end of the year.

Cannon Mills Company, Kannapolis, will convert 205,000 spindles to long draft, with Saco-Lowell doing the work. The work will be divided among the company's several plants. This is understood to be the largest order of this kind on record.

North Carolina State College, Raleigh, N. C., textile department, has installed 14 additional looms. Equipment has also been added to the knitting, dyeing, and yarn manufacturing departments.

Joanna Cotton Mills, Goldville, N. C., are planning to change their entire equipment of 89,000 spindles to the long draft type. It is understood that contract has been given to Saco-Lowell Shops for the equipment.

Burlington Mills Company has purchased the Premier Silk Mills, Inc., High Point, N. C., and will install much new equipment for operation of the plant.

The Summerville (Ga.) Cotton Mills have been purchased by a group of Chattanooga citizens. It has not been announced definitely whether the plant will be operated or re-sold.

Aragon-Baldwin Cotton Mills, Whitmire, S. C., will enlarge the beam storage department and machine shop. Also, an addition to cost $20,000 is under construction.

Kerr Bleaching & Finishing Works, Concord, N. C., has installed a new wide Sanforizing machine to process drapery and slip cover trade up to 60 inches wide.

Tubize Chatillon Corporation, Hopewell, Va., has installed several high speed warp knitting machines of a new type and design.

Russell Manufacturing Company, Alexander City, Ala., will convert 40,000 spindles to long draft of the Saco-Lowell type.

The Jewell Cotton Mills, Thomasville, N. C., will install new Saco-Lowell combers.

Cherokee Spinning Company, Knoxville, Tenn., has constructed a new warehouse for storing raw cotton.

The Erwin Cotton Mills Company, Durham, N. C., will repair 21 houses in the mill village at a cost of $6,500.

Lola Mills, Inc., Stanley, N. C., have completed the remodeling of the mill offices.

Huxster with Trico

H. L. Huxster, 1110 Darby Road, Upper Darby, Pa., has been appointed district sales representative in southeastern Pennsylvania and southern New Jersey for the complete line of fuses and equipment of the Trico Fuse Mfg. Co., Milwaukee, Wis.

◆

"Thank You, Dr. Smith"

I have read with interest your editorial entitled "Some Thoughts on Research" on page 43 of the July issue of COTTON and I am pleased to note your commendation of the exchange of information which the visit of the English delegates afforded and your championship of the need for research in the textile industry here.

As a member of The Textile Institute and of the committee of American members which arranged the visit of Mr. Nasmith and Mr. Goodall, I should, however, like to correct and clarify the information in your editorial on the functions and activities of this body.

The Textile Institute is composed of members from all branches of the textile industry and at its inception it engaged in the promotion of research but in 1918 its research activities were transferred completely to the several British research associations which were formed at that time. Since then, its principal activity has been the promotion of better textile education and the dissemination of technical textile information. In this connection, its journal "The Journal of the Textile Institute" is the official medium of publication for the various research associations, including the British Cotton Industry Research Association (including its rayon and silk sections), the Wool Industries Research Association, the Linen Industry Research Association, and the Technological Laboratory of the Indian Central Cotton Committee. The Shirley Institute is the name of the laboratory which is operated by the British Cotton Industries Research Association. Membership in this or in any of the other research associations is entirely independent of membership in The Textile Institute.

HAROLD D. W. SMITH.

New Publications of Textile Interest . .

(These publications may be secured direct from the manufacturer or through COTTON.)

The Patterson Foundry and Machine Company, East Liverpool, Ohio. Folder pointing out reduced grinding costs by using the company's high speed chrome-manganese mill; said to produce superior gloss, absolute uniformity, absence of contamination, elimination of centrifuging or magnetic separation.

Gulf Oil Corporation, Pittsburgh, Pa. Folder showing "another giant industry profits from Gulf lubrication", with emphasis on silk throwing and the full-fashioned hosiery industry. Well illustrated showing views in throwing plants, and full-fashioned hosiery mills. Has interesting story of invention and adoption of full-fashioned hosiery machines.

Georgia-Kincaid Mills, Griffin, Ga. Leaflet on the highlights from the history of Dundee towels.

The Truscon Laboratories, Detroit, Mich. Folder describing Flor-Dye system for decorating and preserving cement floors, and illustrating practical applications.

Stonhard Company, 401 North Broad St., Philadelphia, Pa. Folder descriptive of the company's concrete surface treatment to prevent disintegration and dusting of concrete floors; said to keep heavy duty floors smooth, safe, and sanitary.

Whitin Machine Works, Whitinsville, Mass. Literature introducing the new patented Martin outline bottom cones for Woonsocket and Whitin-Woonsocket roving frames to make evener and stronger yarns.

The Holo-Krome Screw Corporation, Hartford, Conn. New catalog of fibro forged socket screws, forty pages, pocket size, contains tables, and applications.

The Lunkenheimer Company, Cincinnati, Ohio. New 44-page list price schedule superseding all previously published price lists. Covers entire line of valves, boiler mountings, and lubricating devices.

Speedway Manufacturing Company, 1834 S. 52nd Ave., Cicero, Ill., formerly Electro-Magnetic Tool Company. Folder descriptive of new Speed-Way hand drill and grinder, originally intended for home use, but being adopted by industrials.

Snap-On Tools Corporation, Kenosha, Wis. Catalog on tools especially used in the textile industry. Illustrates and prices tools for opening and picker fixers, card room fixers, card grinders, spinning fixers, twister fixers, spooler fixers, and loomfixers, for various types and makes of machinery.

Georgia-Kincaid Mills, Griffin, Ga. Booklet "Concerning Towels Past and Present", a 28-page romance of the towel and its development. Pictures scenes in Georgia-Kincaid Mills and points out interesting facts about organization. Booklet prepared by staffs of Georgia-Kincaid Mills; Woodward, Baldwin & Co.; and The Wesley Associates.

Chunilal Mehta & Co., Ltd., 51 Marwari Bazar & 43 Esplanade Road, Fort, Bombay, India. Annual cotton chart for 1937-38, which is 14th year of publication. Gives prices of American and Indian cotton. Contains inset relating to acreage, crop and yield figures of Indian cotton for 10 years; acreage and production statistics pertaining to Indian and American cottons; and bank rate in India.

Benjamin Electric Manufacturing Company, Des Plaines, Ill. Catalog descriptive of angle bracket type series of explosion proof lighting units suitable for side wall mounting.

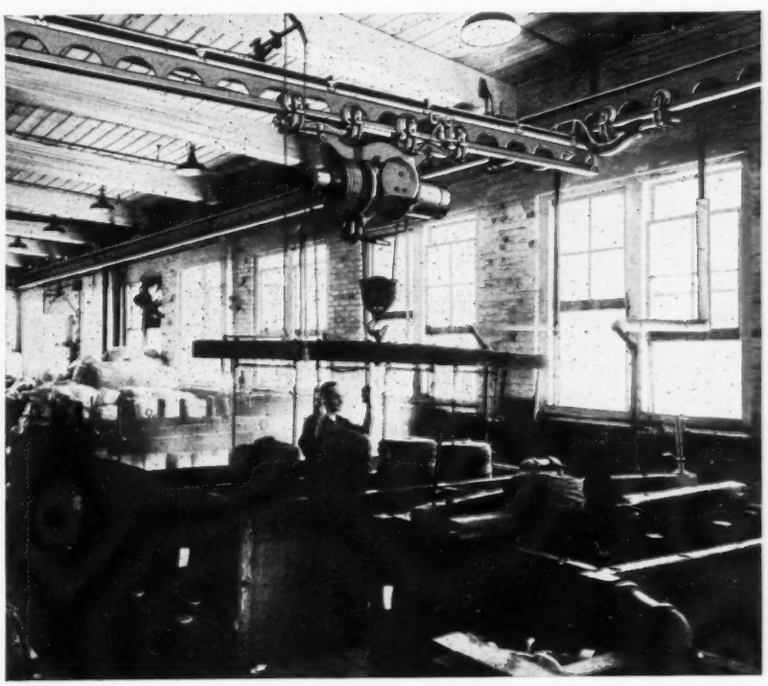
Flexrock Company, 800 N. Delaware Ave., Philadelphia, Pa. Literature descriptive of Ruggedwear Resurfacer for repairing concrete floors.

C. J. Tagliabue Manufacturing Company, Park and Nostrand Avenues, Brooklyn, N. Y. New 64-page catalog on indicating, recording, and controlling instruments for temperature and pressure. Also presents latest TAG instrument developments.

Lawrence Pump & Engine Co., P. O. Box 70, Lawrence, Mass. Bulletin D-48 descriptive of the type HBD vortex pump, a unit for general industrial services.

CLEVELAND TRAMRAIL

MATERIALS HANDLING EQUIPMENT



● Regardless of your dyeing method or requirement there is Cleveland Tramrail Equipment to effectively serve you and assist in producing a better product at reduced cost.

● The equipment shown above readily handles Two Ton Impact Loads.

Consult your phone directory under Cleveland Tramrail.

CLEVELAND TRAMRAIL

Division of

THE CLEVELAND CRANE & ENGINEERING CO.

1175 Depot St.

WICKLIFFE, OHIO

PERSONAL NOTES
about Men You Know

H. E. RUNGE, who recently resigned as superintendent of Mathews Cotton Mills, Greenwood, S. C., has become assistant to L. E. FOSTER, as general superintendent of Grendel Mill and Panola Mill, Greenwood and Anderson (S. C.) Cotton Mills. Mr. Runge was succeeded at Mathews by F. L. STILL, formerly superintendent of the Victor plant, Victor-Monaghan Company, Greer, S. C., and for the past several months sales representative for the Steel Heddle Manufacturing Company.

JAMES A. HENRY, formerly with the Cedartown (Ga.) Yarn Mills, has become assistant superintendent at the Greenville (N. C.) Spinners, Inc.

HAROLD MERCER, formerly assistant treasurer of the company, has become vice-president and general manager of the Firestone Tire & Rubber Company cotton mills, Gastonia, N. C., succeeding HENRY M. MCKELVIE, resigned, who has filled those offices since Firestone acquired the plant in 1935.

JOSEPH J. BRADLEY has resigned as agent of the Merrimack Manufacturing Co., Huntsville, Ala., and has been succeeded in this position by HENRY M. MCKELVIE, formerly vice-president and general manager of the Firestone Cotton Mills, Gastonia, N. C. Mr. McKelvie will assume his duties at Merrimack on September 1. The plant has been closed for some months.

WYLLIS H. TAYLOR, who has been vice-president and general manager of the Appleton Co., Anderson, S. C., has become general manager of the Newnan (Ga.) Cotton Mills, a newly created position. R. H. FREEMAN, president at Newnan, is now in Canada on a leave of absence. R. A. FIELD, JR., is superintendent of Newnan Mill No. 1, and KARL B. NIXON superintendent of Mill No. 2.

JOHN F. TINSLEY, vice-president and general manager of Crompton & Knowles Loom Works for the past 20 years, has been elected president of the corporation succeeding the late DR. HOMER GAGE. RUFUS S. FROST, clerk of the corporation, and assistant sales manager, was elected vice-president. MRS. MABEL KNOWLES GAGE, widow of Dr. Gage, was elected a director.

WADE P. STOWE has been promoted to superintendent of the Crescent Spinning Company, Belmont, N. C., succeeding the late R. F. FISHER. C. C. HOPE succeeds Mr. Stowe as superintendent of spinning.

L. E. TERRELL, formerly of Greenville, S. C., has been made superintendent of Best Manufacturing Company, Gainesville, Ga.

B. W. BINGHAM, who has been overseer of carding at the Brookside Mills, Knoxville, Tenn., and more recently in the same capacity at the Pickett Cotton Mills, High Point, N. C., has become superintendent of the Virginia Mills, Inc., Swepsonville, N. C.

JAMES A. LYBRAND, JR., formerly assistant treasurer of S. Slater & Sons, Inc., Slater, S. C., has become affiliated with Carter Fabrics Corporation, Greensboro, N. C.

W. A. HUNT, formerly superintendent of the Pickett Cotton Mills, High Point, N. C., has resigned to become associated with Mill Devices Company, Inc., and Carter Traveler Company, Gastonia, N. C. He will be sales representative in Georgia, Alabama, and Tennessee, making his headquarters at LaGrange, Ga.

RICHARD C. PRICE, formerly with the fabric department of Celanese Corporation, has become associated with the sales division of the U. S. Finishing Company.

F. C. NEIGHBORS has been promoted to overseer of spinning at Strain Mfg. Co., Rome, Ga.

HOWARD BARTON, formerly assistant to the general superintendent of the Leaksville-Spray-Draper, N. C., mills of Marshall Field & Company, manufacturing division, has been made superintendent of the company's silk mill at Spray, N. C., succeeding A. RIGBY. Mr. Barton has been with these mills for 28 years.

D. C. SCOTT, JR., of Henry L. Scott Company, Providence, R. I., a graduate of Brown University and Massachusetts Institute of Technology, has sailed to London, England, where he will be married to MISS HELEN SAFFORD BONNELL. Mr. and Mrs. Scott will return after the wedding trip and will reside in Providence.

JAMES A. BANGLE, who for 43 years has been an employee of the Proximity Manufacturing Company, Greensboro, N. C., and superintendent of the mill since 1905, has retired. He is succeeded by JOHN D. SCOTT, formerly assistant superintendent, who began with the company over 20 years ago as a laborer and was consistently advanced.

HARRY BOEGLIN, formerly head printer with the Textile Dyeing & Printing Company of America, Inc., Fair Lawn, N. J., has joined the staff of Lincoln Print Works, Paterson, N. J., as superintendent of the print shop and head colorist.

JOHN H. GOSS has been elected president and general manager of Scovill Manufacturing Company, Waterbury, Conn., succeeding his brother, the late EDWARD O. GOSS. LEAVENWORTH H. SPERRY, treasurer of the company, was elected also to the office of executive vice-president.

DWIGHT WILHELM, secretary-manager of the Huntsville (Ala.) Chamber of Commerce, has resigned to become secretary-manager of the Alabama Cotton Manufacturers' Association.

ALFRED W. MCQUILLAN, JR., formerly with the Treasury Department, Washington, D. C., has resigned to become manager of the statistical department, National Association of Hosiery Manufacturers, succeeding HOWARD C. HAGEMAN, who is now developing an investment service in which he is interested.

S. J. ADAMS of the Spencer Mills, Spindale, N. C., has become superintendent of the Radford (Va.) Weaving Company.

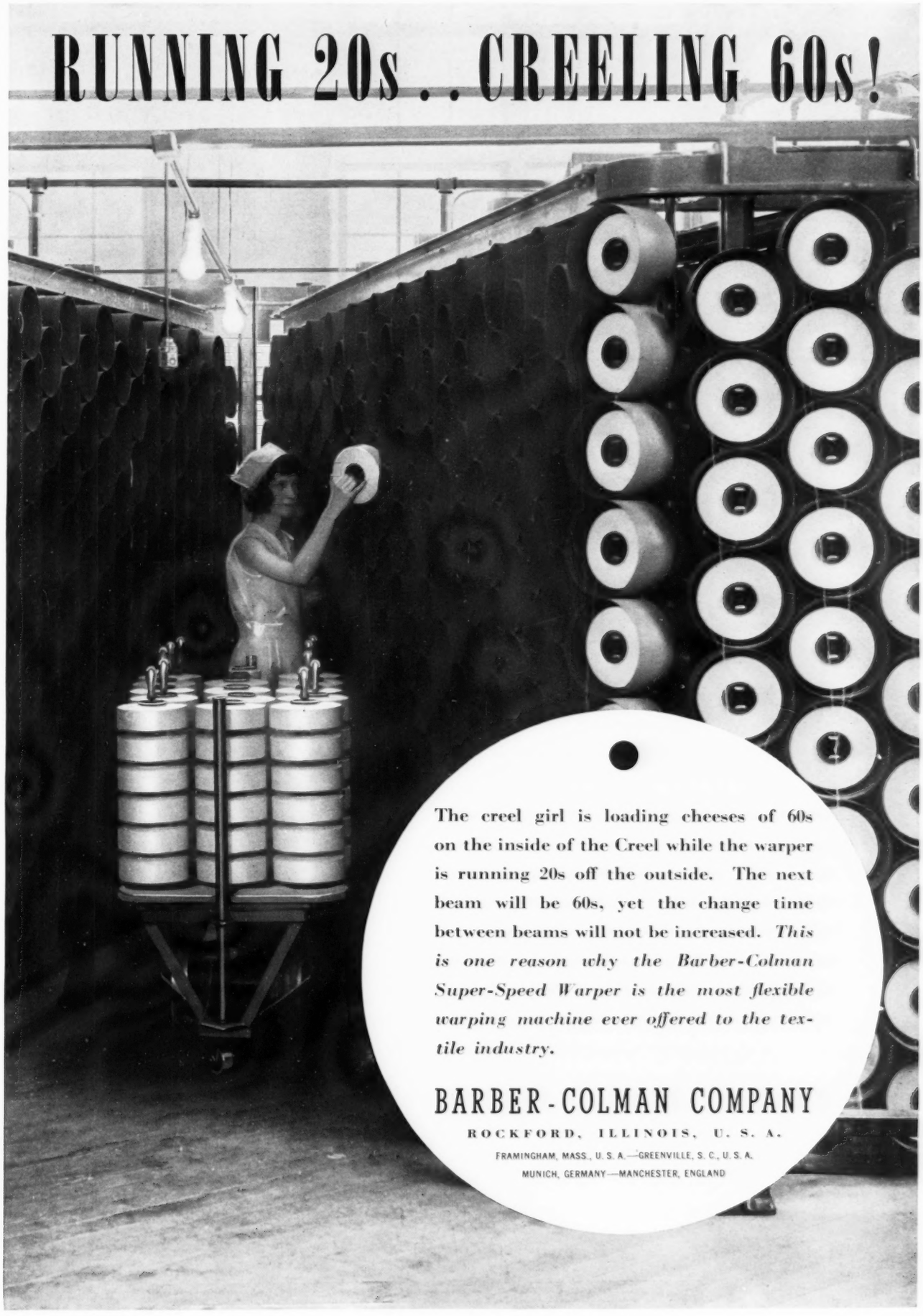
Obituary

HENRY LAIDLAW, Detroit, Mich., special representative for the Worthington Pump and Machinery Corporation, Harrison, N. J., passed away June 25 in Kingsville, Ont., Canada, of a heart ailment. Interment was at Cincinnati, Ohio.

ROBERT CHAPMAN, formerly president of Marlboro Mills, McColl, S. C., and Bennettsville, S. C., Cheraw Cotton Mills and Icemorlee Mills, Monroe, N. C., passed away the first part of August at Red Springs, N. C.

(Additional obituary items are on page 76)

RUNNING 20s . . CREELING 60s!



The creel girl is loading cheeses of 60s on the inside of the Creel while the warper is running 20s off the outside. The next beam will be 60s, yet the change time between beams will not be increased. *This is one reason why the Barber-Colman Super-Speed Warper is the most flexible warping machine ever offered to the textile industry.*

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

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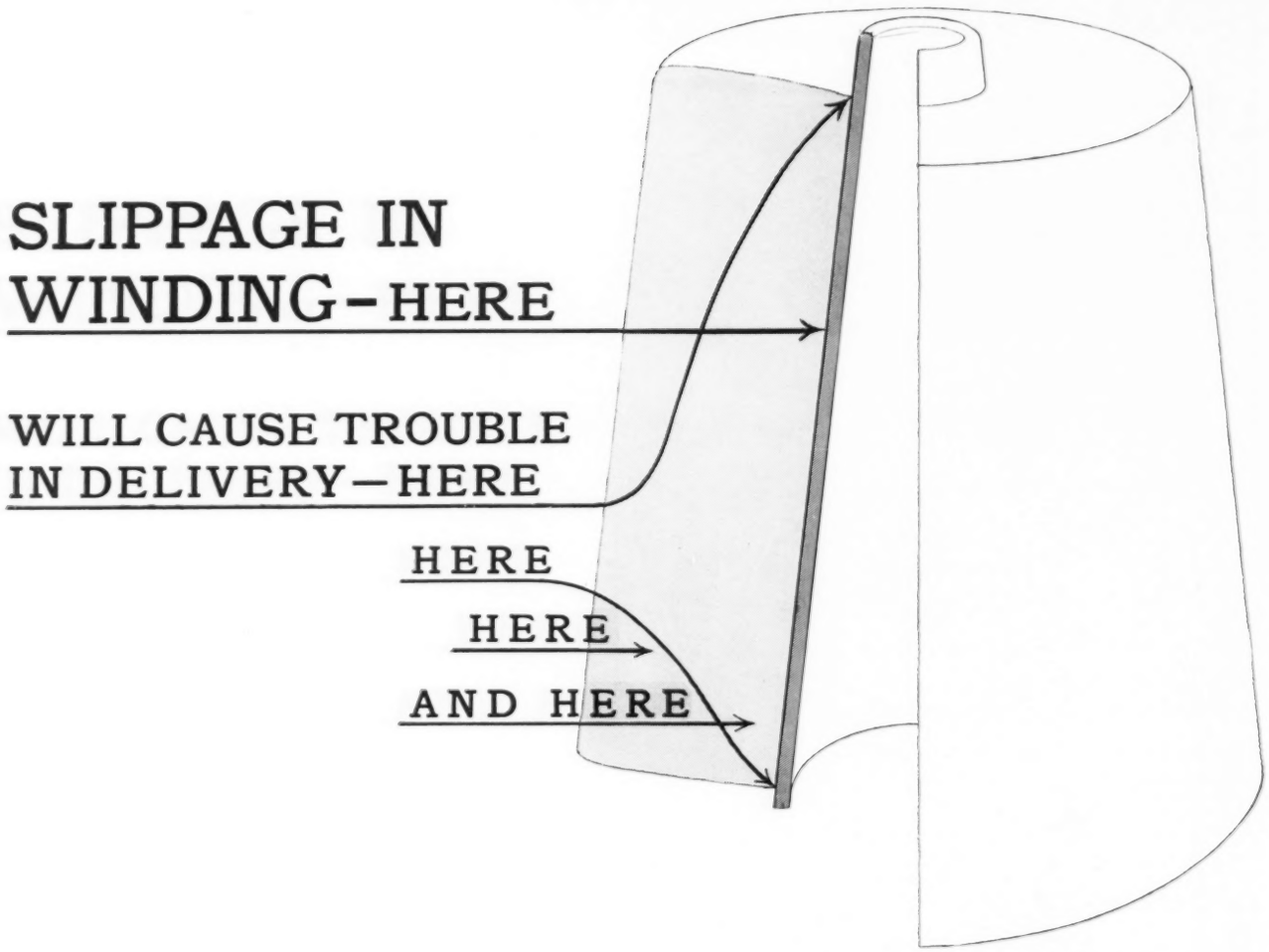

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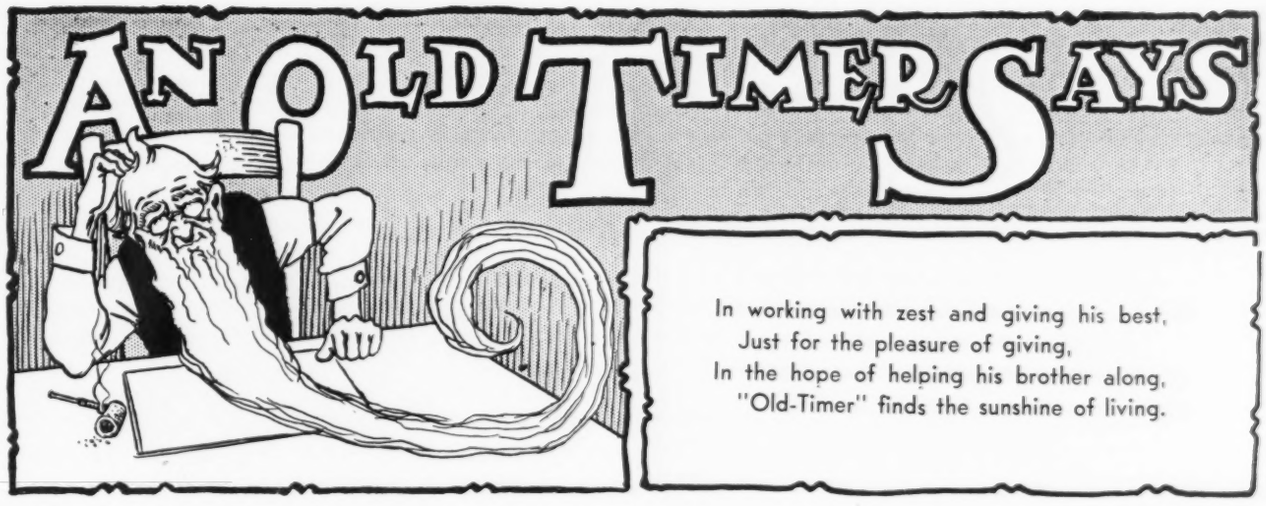
AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

Some Pertinent Remarks on Inconsistency

(Since this article is written in conversational style, it should be borne in mind that these paragraphs in regular type represent OLD-TIMER'S part of the conversation; and that those paragraphs in italics represent JIM'S part.)

I cannot understand the inconsistency of the average employer—

The in-what, OLD-TIMER? *Don't you get started on any of those big words that I cannot understand—*

Certainly not, JIM. The word "inconsistent" is not a big word and most everyone knows its meaning, but if you think best, I'll look it up in the dictionary to be sure to give you the correct meaning. This dictionary here explains the meaning in several ways, but I believe "self-contradictory" is the meaning which fits best the idea that I had in mind when I made the statement that I cannot understand the inconsistency of the average employer. In fact, I have never questioned an employer who could explain his attitude toward superintendent and overseers getting too old to be efficient. That is, of course, if that employer is one of those cranks who claims he believes in all of this propaganda we see in papers and magazines about firms that will not hire men over 40 years old.

Why should you worry about that, OLD-TIMER? *You are about twice forty and you certainly don't think anyone would ever give you another mill to run—or do you?*

No, JIM, that's not the idea, but I have been seeing so much argument, pro and con, on this subject, and have tried so hard to find just one employer who could put up even a reasonable defense for the advisability of a firm of any kind not wanting to employ men over forty, that I am just forced to let off a little steam before I explode or something. Now, JIM, just what kind of an argument can you put up to show me that it is good policy for a firm to let it be known that they don't want men over forty years old?

Who, me, OLD-TIMER? *Not on your tin-type, but I am afraid Mr. Jackson (that's* JIM'S *boss) is leaning a little that way.*

Oh, I say, JIM, who did he have to operate on his daughter for appendicitis?

Why, Dr. Brown, of course; he's been the family doctor as long as I can remember.

There you are, JIM—will you please explain to me why your boss did not let that young doctor whom Dr. Brown has taken with him, operate on his daughter? I understand that he served as an interne in one of the finest hospitals in the East and is going to specialize in surgery and he certainly should be more up to date than Dr. Brown, who is past forty years old.

Forty years old, my eye, OLD-TIMER, *you know Dr. Brown is past sixty years old.*

Sure, JIM, but we are talking about men who are just past forty years old not having a chance to get a job.

Yeah, OLD-TIMER, *but that is different. You know Mr. Jackson has confidence in old Dr. Brown who has been operating on people right here for the last thirty years.*

Different, did you say, JIM? Well, I can't see a darn particle of difference in that illustration and a man who runs a cotton mill.

Mr. Jackson wanted *knowledge* coupled with *experience* when it came to having an operation performed on his daughter. Do you mean to tell me that a mill president doesn't want those same qualifications in the man he wants to run his cotton mill?

I can't answer that one, OLD-TIMER, *and I suppose it is analogous to the experience we had in No. 2 mill that time when my boss bought some western cotton and the print cloth mill got torn up so badly and he sent for you to come here to see what the trouble was. I remember how he looked when you told him he had gotten hold of some sledded cotton that contained fine strips of the inside bark off of the cotton stalks and that this bark being almost as strong as sisal or jute fiber was knocking the ends down on the spinning frames because it would not draft. He had never heard of sledded cotton and had no idea what it was.*

That's it, JIM, you let one of them get into trouble and he then calls on some man who has had years of experience—a man over forty years old—to find

out what the trouble is. In fact when I read of some of this "too old at forty" stuff, I can't help but think back through the many experiences that you and I have had, and it makes me realize that if we had been compelled to rely on men under forty years old to help us out with the many difficulties that we had to overcome in running a cotton mill, it would have been a pretty hard road to travel.

From the time that I was put to hauling up cloth, oiling the shafting, looking after the toilets (we had no negro scrubbers in those days), keeping up all the large belts and doing all of the chores for the second hand and then learning to fix looms in my spare (?) time, I have obtained valuable information and advice from men past forty years old. Yes, and every man who reads this has done the same. In fact a very prominent mill man remarked to me a few weeks ago at the American Cotton Manufacturers' Association convention that he realized when he was thirty-five years old that he was just beginning to have some sense about management and how to run a cotton mill.

I suppose I would have been sitting there yet if old man Alex Smith had not come along and explained to me how to build a set of 5-leaf cams to weave sateen 1, 3, 5, 2, 4 on a straight drawing-in draft and years later when I had an opportunity to work in the card room, Mr. Vaughan, author of "Vaughan's Practical Carder" and at the time fifty-nine years old, taught me more and in a shorter length of time than I could have learned otherwise in ten years.

Some few years ago the president of one of the largest plants in the South decided to build another mill. The engineering firm that he employed sent a young man to look over the local situation. After he had inspected the site for the new mill and had gone through the old mill he went up to the main office to see the mill president for final instructions. This young man, I am guessing, was probably thirty-five years old and had been with the engineering firm since graduating; therefore he had considerable experience. But the mill president was afraid to risk him and requested the firm to send an older man to build his mill. The mill president told me he did not intend to let that young chap learn engineering at his expense.

Yeah, OLD-TIMER, *I begin to see how that word "inconsistent" fits those men who have an idea a fellow is all "washed up" at forty when all of the experience, all of the history and everything else proves that very few men have ever attained the height of their succeess before reaching forty. In fact all of those fellows who are doing this squawking are over forty themselves and I'll bet dollars to doughnuts they would not step down from their jobs where they have money invested and put a man under forty on the job to handle their money.*

Say, that's an idea, JIM! If they think a man is no good after forty, why in heck don't they step down and put a man under forty on the job who they say can run the job better than they can?

Let it be distinctly understood by OLD-TIMER'S readers who are under forty that he appreciates fully that thousands of men under forty are running their jobs successfully, but he does claim that those same men will be even more successful after forty on account of the additional experience they will gain. And those of you who know OLD-TIMER personally can vouch for the confidence he has in men under forty because he not only has given many of them responsible positions himself but has been instrumental in placing many men under forty in positions where they have developed into prominent mill men.

But what burns OLD-TIMER up and starts him pulling his hair is to read one of those articles which would indicate that if one of those young men he has had the pleasure and honor of helping to start in the mill business and who has made an outstanding success should lose his position after he is forty years old, that he is then too old for a mill president to employ.

This explains why OLD-TIMER used the word "inconsistent" in his remark. He claims any man is inconsistent when that man says a man is too old at forty while he, himself is probably fifty or sixty and is holding on to his own job. By the same token, OLD-TIMER would be inconsistent if he was all the time saying things to you in these articles that he did not know from experience were sound, practical reasoning.

(Editor's note—In connection with the foregoing article by OLD-TIMER, an incident that occurred this summer is pertinent. A young man thirty-two years old, the protege of an older man, wrote his friend that a textile machinery firm agent asked him if he would be interested in taking a position to operate a mill in a foreign country. The position would require the man in charge to purchase the cotton and have full charge of all manufacturing operations. The young man took the matter up with his older friend as he had had no experience in buying long staple cotton to manufacture 60s to 100s which would be used at this mill. He was somewhat skeptical as to whether he could qualify for the job or not.

To make a long story short, the elder man took it upon himself to get in touch with the machinery agent, whom he had known for many years, and offer his services free of charge to go along with the young man and stay with him until he was familiar with purchasing the cotton and any other duties that he might find in his new position.

All of this time, the elder man thought the inquiry referred to a mill that was already in operation. Later, however, he learned that the mill had not yet been built and the man they were looking for would purchase all machinery, supervise its erection, and then take the position as manager.

This sidelight changed the whole picture inasmuch as it would require much more time than the elder man had anticipated, but he could not disappoint the young man by backing out so away they went to New York for a conference with the firm. Briefly, the financiers said in substance:

"We have been looking for a man to take charge of this mill for us and believe that we have found the man we want in this young man Carroll (not correct name) but inasmuch as the mill is yet to be built and machinery is to be purchased we realized this young man had probably not had quite enough experience to take on all of this responsibility, therefore when the elder man kindly offered to work with Mr. Carroll that combination appealed to us and we are now ready for you to visit this foreign country and after studying local conditions in representative mills there and also seeing how the cotton raised in that country runs in cotton mill machinery, you can return to the United States, purchase the machinery while we are having the building erected, and when you have the machinery erected and running you can return to the States. We propose to make our manager a partner in the business as well as manager, and as you seem to be this young man's best friend, will you please look over the tentative contract and tell us frankly if you feel it is an attractive proposition for him?"

OLD-TIMER feels that this is at least one firm that he cannot class as being inconsistent.)

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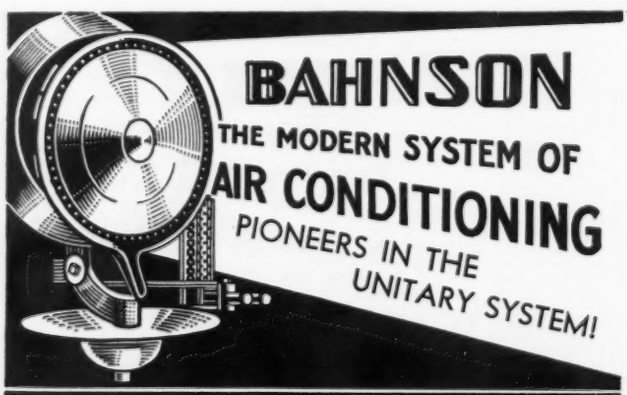

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HOW OTHER MEN MANAGE

The College Man in the Cotton Mill

A "practical" man gives his views—and they are interesting—on this ever-present topic of discussion

EDITOR COTTON:

I can't understand to save my life why there has been so much debate and argument about college or textile school graduates coming into the cotton mills. If we believe in education, why not stand by it? To hear some people talk, or to read what some people write, you would think the textile schools were turning out gangle-legged morons with match-box brains. "Aw, them fellers ain't got no sense," one fellow said, and I half admitted that maybe they didn't have much practical sense, but that's what they are seeking and in most cases getting. And that's what I want to talk about.

It's a fact, we can't get anywhere just talking about a thing, and we can't get anywhere by going to the extreme on either side; what we ought to do is get on a basis of common sense and then look at the thing from three angles: the past, the present and the future. From these three angles, we should make certain allowances and deductions and the best thing to do will show up of its own accord. So much for that—now, let's go on.

When the textile graduate comes into the mill he brings us in something the average man can't get from general mill experience even if he has worked for 50 years. All right, that's a point.

When a man works in the mill for twelve years he's got something the textile student can't get in school even if he goes to school fifty years. That's another point.

Now, a man with a whole lot of "schooling" and no experience is no good—he doesn't know how to take hold. His education is merely a blueprint of the house-to-be. All his problems heretofore have been theoretical. For machines and material he has used paper and pencil marks. His whole experience has been one of substitutes. But that is where education gives the student something he can't get in practical experience. His problems being substitutes for the real, he can be given more of them to work out in four years of school than experience could give him in a life time as long as that of Methuselah. However, textile students do have a good many machines and, of course, many different kinds of apparatus and gadgets that require more than just pencil marks, but the problems that arise are not of a nature to give practical experience.

I won't say that the man who has worked twelve years in the mill without education, is no good. For what few problems he has had, have been real. His house is a house—not a blueprint. His hands are trained to take hold, and though his knowledge is limited, his experience has been life itself. So you see, this man has something the textile student can't get in school.

The textile graduate is compelled to come to the man in the mill to finish out his education. He must have what the man in the mill has or his education will amount to so much wasted time and nothing else. In school he has only learned to use his head, and only the inside of it at that.

I must admit the college man is much better off, after he gets practical experience, than the practical man who has had no education or only a limited amount. But that's the practical man's fault and no one else's. When he gives the college man something he should get something in return; in that way, both would benefit. The way I see it, the practical man is usually giving everything and receiving nothing in return.

Nearly all of the men who now hold good positions in the cotton mill are men who were selected for those positions because they showed promise when they were on smaller jobs. However, very little attention was given to their education, and they were promoted with that side of their lives undeveloped. The mills are responsible for this because they didn't demand education. They sought men who showed leadership and whether it was dumb leadership or otherwise, they didn't stick around to see.

Now that is a thing of the past. You, I or anyone else will have to show an aptitude for education, or study, and for new ideas to get a better job. Men are measured now and if they are found wanting they stay in the low places.

Does that mean that we mill hands have no chance for advancement? No. It just means that we will have to study. Not just a little night schooling alone, we will have to get us some books and study in between times—and not just mill calculations and nothing else, but English and other things that will promote the social side of our lives.

Outside of mill calculations, I think English is the most important thing to study. English is a thing that must be used everytime we open our mouths to speak. A fellow can hardly call his dog without using English in some form. It is a thing we use from the time we wake up in the morning until we go to sleep at night and the sort we use is the thing by which we are judged even more than by the clothes we wear. There used to be an old saying, "Keep still and nobody will know you're crazy." It's a fact—we show our ignorance quicker by the type of English we use than in any other way.

Now, it's not necessary to buy a lot of expensive books in order to learn good English. All the English necessary for everyday use can be found in the third to seventh grade English books. Most any mill man's children have these.

Before I started writing this rigmarole I talked with several textile graduates who now have good jobs in the mill and also with a good many men who have not had the benefit of a college education yet, who by force of character and merit, have worked themselves up to good jobs. Some of them gave me good answers and also added good thoughts; all of them showed interest in the subject. Here are two examples:

"What about the college man coming into the mill?" I asked the first man, who holds a good job but is not a college man himself.

"What do you mean?" he asked in return.

"Who's responsible for it? Why is it necessary that we should have college men in the mill?" I asked.

"In the first place," he replied, "we average mill hands are responsible for the college man coming into the mill, and, in the second place, it is necessary to bring the college men into the mill because most of us want to do things just like they were done twenty years ago." And then he went on to say: "Take Mr. Blank, for instance. Have you ever thought how few overseers there are like him? He's always in for new ideas, and, if he has tried a thing before and failed at it, he is willing to try it again. Most of us who have grown up in the mill and are used to things as they are, think they ought to remain that way. If we expect things to remain just as they are, we get behind the times. Now, Mr. Blank isn't a college man, but by keeping pace with time he's just as good as any college fellow."

"That's interesting, " I said, "tell me more."

"I think that most of the mills have come to the conclusion that the mill which is a little ahead of the times is the mill that is going to make the money. It therefore stands to reason that they are not going to have a man in their organization who wants to lag behind."

"What has that to do with textile graduates?" I asked?

"Well, I've noticed that while just a few of those fellows seem just a little bit stupid, most of them are of a nimble-witted sort who try to carry things toward the future," he said.

The next man being a textile graduate, I approached him with a little different question.

"Why are textile graduates getting good jobs in the mill so fast?" I asked him.

"Make yourself a little plainer, old man," he said. "To hear you talk, a person would think that textile graduates were gobbling up all the good jobs."

"No, no," I said, "I don't mean just that. But since you speak of them as gobbling up jobs I'll have to admit that some of them seem to go up like gas-inflated balloons. But that's not what I want to talk with you about. What I want to know is: Why are textile graduates on the 'preferred list'?"

"You seem to be talking in riddles," he said, "but I believe I see what you mean. Textile graduates are preferred, in many instances, because they have spent four years in studying the cotton mill. They've studied the machines, the product, the processes and all the technical details, and also they've studied the people. As a matter of fact, the textile graduate comes into the mill with a fine mental equipment."

"That's talking up for your side of it," I said, "but what about the practical side of it? Can't a man run the average overseer's or second-hand's job with only practical experience?"

"Yes," he answered. "They always have done it and can yet for that matter."

"Well, then why is it necessary for the mills to get textile graduates for such jobs?"

"You've asked me another question that is more like a riddle than a question," he said. "I might turn about and ask you why education is necessary at all, but that wouldn't be answering your question. I think the mills want the men who are best equipped for the job, and whether they are men who come up from the ranks or whether they are textile graduates makes little difference."

"Now, you've got me puzzled," I said. "You say the textile graduate comes into the mill with a fine mental equipment, and then you turn right around and say that it makes no difference whether a man is a textile graduate or not."

"I thought I made myself clear," he remarked, "for I said the mills are looking for the fellow who is best equipped."

"What do you mean by 'best equipped'?"

"I mean the fellow who is best prepared for a job is the man the mills are looking for," he said, and then continued: "You boys here in the mill have a better chance to learn than the textile student in school, for you have first-hand information. You have the machines, the processes and everything right before you. As a matter of fact, you have the whole thing, while the textile student has only a parcel. You can learn the whole thing right where you are. The textile student must learn part of it in school and then come to the mill and learn the rest of it."

"But textile students get specialized instruction," I said.

"Yes, that's true," he remarked, "but you can get instruction, too."

"How?" I asked.

"Well, in different ways," he said. "You can go to night school, you can take an extension course from the state university, and you can take a correspondence course from a correspondence school."

"That sounds like a lot of work to me," I said.

"Maybe so," he said. "But you can't do all this in a few months. The textile graduate has spent, altogether, about fifteen years in school in order to win his diploma. You boys here in the mill who have had seven or eight years of schooling shouldn't expect to cover six or seven years more study in a matter of months. You should set for youself a goal say, five or six years off, and then you won't

get disgusted or discouraged so quickly. Always try to spend three or four hours a week on your studies, and keep at it. By doing that, it won't be so long until the studying will become a habit and after it has become a habit it will be a pleasure.

"The trouble with most of the fellows who start out to learn something is that they gorge themselves with it at the beginning and thereafter the thing is distasteful."

"You talk about studying as if it were something to eat," I said.

"To a certain extent, studying is like eating," he said. "If you take it moderately, not many hours will pass until you are ready for more of it."

"That's a good idea," I said. "I think I'll try it. There is one thing more I want to ask you about, though, and that is, how can the textile graduate give the practical man something in return for what he gets from him?"

"I would suggest a study club with the practical man and the textile graduate coming in on an equal footing. The practical man furnishing the practical material for the textile graduate to study, and the textile graduate furnishing the technical material for the practical man to study. I think both parties would be helped by such an arrangement."

A. H. T. (N. C.)

Warp Slipping on Beam

Also, an interesting discussion on following the warps through the weave room when running special fabrics . . . . . .

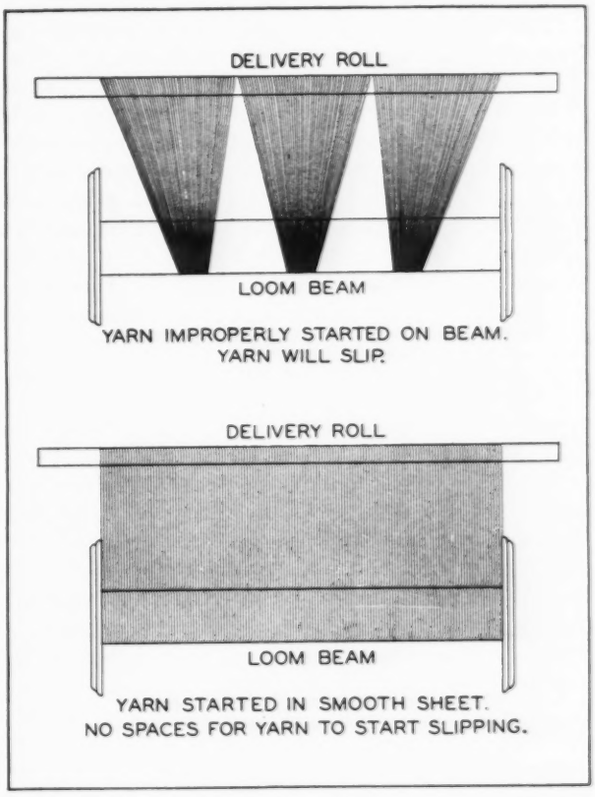
EDITOR COTTON:

"CONTRIBUTOR NO. 6662", whose question appeared on page 129 of the June, 1937, COTTON, is having trouble with the yarn slipping on the loom beam and wearing out the selvages against the beam heads. His particular construction is 65x72, 54-inch fabric woven on a 56-inch Model E loom.

In order to correct any trouble it is first necessary to determine exactly of what the trouble consists; next, to find what is causing the trouble, and last, to correct it. Yarn slipping on the loom beam is caused by the warp being wound on the beam without sufficient tension to hold it—when a certain number of picks of a specified count of yarn are put in the cloth. By this I mean that certain factors enter into the amount of cushion that can be had on a warp. We all know that good weaving depends, to a large extent, on having as much cushion as possible on the warp. But the amount of cushion varies, being determined by the kind of fabric, the grade or class of yarn, the yarn count, the tension at the loom, and certain requirements for breaking strength.

The first place to check is the warpers to see that all section beams are properly lined and the barrels centered and that the spindles are not bent. If any of these defects are present then a lop-sided beam will be the result; when the beam is lop-sided then the yarn runs tight and slack at the slasher. Thus, in a set of say 10 section beams, one beam must be weighted heavily to prevent slack coming into the warp. If slack enters the warp then certain places in it will not be solid and the yarn will slip at those points.

The next point is the loom beam. Check to see if the barrel is out of center, if the heads are straight, and if the spindles are straight. If these points are not in order there will be the same trouble as explained with the section beams; the beams of warp will be lop-sided but in this instance the one beam carries the entire warp whereas at the warpers the beam carries only a small percentage of the entire warp. It is possible to run a bad beam on the loom but it is not possible to run a bad beam and



make perfect work. With the beam head untrue the yarn usually, on one side or other, drags over the edge of the beam head and chafes or cuts the yarn at the slashers; this type head causes a high and low selvage and on the high side the traversing press rolls (at the slasher) often pinch the yarn against the beam head causing cut selvages.

See that the beam heads are smooth and that no burrs exist that may catch and cut the selvage. Last, but not least, check the condition of the perforations for drying the selvage. It may be necessary to smooth these. If the perforations are rough or sharp they will cut or chafe the selvage, caused by loom vibration, even when the yarn has not slipped.

At the slasher the first thing to do is to see that the beam stick is placed properly, that is, whatever is used to fasten the yarn to the beam should be so placed that the yarn is held securely and at the same time see that the yarn is not bunched but is arranged in a smooth sheet. If the yarn is bunched it leaves

an opening for the yarn to begin slipping. If it ever starts slipping, nothing can prevent the selvage from cutting.

Most fabrics have a larger yarn in the selvage than in the body of the warp; this is standard practice, but unless the operator knows what he is doing, and unless this has been planned, it will lead to trouble. When placing the selvage in the slasher comb be sure that the selvage is allowed the proper amount of space on the beam and no more, thus, if the body of the warp is composed of 40s yarn and the selvage is 40s/2, then allow twice as much space on the beam for the selvage by placing the correct number of ends per dent in the comb. Otherwise, the selvage will pile up and will not allow the press roll to place the body of the warp properly.

The function of the friction is to prevent slack from the delivery roll to the loom beam. It should not be used to pack the yarn on the beam. Slashers should always run with as light friction as possible and this sometimes leads to the beam turning back—if it becomes necessary for the slasher tender to lease or to cut off a lap he must slow his slasher down and there is a chance that the loom beam will turn backward instead of forward, caused by the yarn wrapping around the delivery roll. To prevent this, the tender may lift the presser roll and thus make a soft spot in the warp with the result that the yarn will slip when pressure is put back on the beam.

The same thing happens at times due to friction trouble; the slasher tender will raise the presser roll and allow the same soft spot to be made.

At times it is found that too much friction is being put on the warp and the yarn is being stretched. In an effort to get away from this the friction is lightened and a soft warp results. Always when checking this be sure that there is enough weight on the presser roll. It may be necessary to add weight on the weight lever. It is better to have too much weight than too little.

At mills that are changing from one fabric to another or that are running several fabrics at the same time, more trouble is experienced than at plants where the slasher tender is thoroughly familiar with the work and has been running the same type of work for a long period. My suggestion for any particular fabric that is giving trouble is to have the warps for it run on a certain slasher and by one man all of the time. With this man, go into the complete story, telling him the trouble encountered and how it is expected to remedy each fault; then stay with him long enough to see that he thoroughly understands and is doing as desired. Require him to make a detailed report on each warp, giving him help if necessary, then follow each warp into the weave room. After this one man is making perfect warps, move on to the next man and so on down the line. See, as far as possible, that each slasher tender always runs the same fabric. It is hard for any man to run one set with a good deal of cushion then on the next set to allow no cushion.

The slasher room then can be summed up in a few words. Run warps without soft spots and with the yarn on the beam as tight as necessary.

In the weave room, with this special fabric, it is well to group the looms instead of scattering them over the entire room, giving several fixers one or two warps. It is better that this fabric be given to one fixer. Here, as with the slasher tender, it is well to spend some time to see that the fixer understands to run the cloth with the least amount of friction possible, consistent with quality and good running. See that all looms are set alike and properly; see that the loom works smoothly and without waste motion. Try to have the loom let-off smoothly and without any jerking.

Next, see that the weaver is familiar with the requirements and problems of this fabric and that the weaver is instructed properly how to regulate the tension on the warp.

Although there are too many things to touch on at this time, I think that if "CONTRIBUTOR NO. 6662" follows this outline that he will dispense with most of his trouble with the yarn slipping on the beam.

CONTRIBUTOR NO. 6683

Average Count

EDITOR COTTON:

In answering "CONTRIBUTOR NO. 4022", who asked on page 100 of the January issue of COTTON for a method of figuring average counts, I will give two methods of so doing that will help him; for other readers it may be necessary for them to turn to this question and read it again to follow the reasoning.

The first method as given below would be correct if the figure "1" stood for 1 pound or for any other unit of weight, though this method would evidently not be applicable in the case of calculations for yarns on beams. The rule would be as follows:

RULE:—Multiply each count by its own units of weight, (in this case pounds). Add together the products and divide the sum by the total number of units of weight. The quotient is the average counts.

Hence:—
1 Lb. of 20s $= 1 \times 20 = 20$
1 Lb. of 25s $= 1 \times 25 = 25$
1 Lb. of 40s $= 1 \times 40 = 40$
1 Lb. of 50s $= 1 \times 50 = 50$

$4 \qquad 135$

$$\frac{135}{4} = 33.75\text{s average counts.}$$

Where the weights of different counts are alike, the rule could not be applied to beam calculations because the yardage would be different in each case, thus:

1 Lb. of 20s $= 840 \times 20 = 16{,}800$ yards
1 Lb. of 25s $= 840 \times 25 = 21{,}000$ yards
1 Lb. of 40s $= 840 \times 40 = 33{,}600$ yards
1 Lb. of 50s $= 840 \times 50 = 42{,}000$ yards

In beam calculations the length is the same for all counts, therefore we could equalize the yardage by altering the weights and find the average counts from the altered conditions.

Taking the yardage found for 1 pound of 50s as a basis, we have:

42,000 yards of 50s weigh 1 pound.

42,000 yards of 40s weigh:

$$\frac{1 \times 42{,}000}{33{,}600} = 1.25 \text{ Lb.}$$

42,000 yards of 25s weigh:

$$\frac{1 \times 42{,}000}{21{,}000} = 2 \text{ Lb.}$$

42,000 yards of 20s weigh:

$$\frac{1 \times 42{,}000}{16{,}800} = 2.5 \text{ Lb.}$$

Applying the rule as previously stated:

2.5	Lb. of 20s	2.5 × 20	= 50
2	Lb. of 25s	2. × 25	= 50
1.25	Lb. of 40s	1.25 × 40	= 50
1	Lb. of 50s	1. × 50	= 50
		6.75	200

$$\frac{200}{6.75} = 29.63\text{s average counts.}$$

I believe that the foregoing clearly shows the difference between the two methods of calculating the average counts and how confusion is sometimes made.

CONTRIBUTOR No. 6778

EDITOR COTTON:

I wish to answer "CONTRIBUTOR No. 4022" who has asked the question on page 100 of the January issue of COTTON "How do you figure average counts?"

According to page 33, Rule 19, *Practical Calculations*, by Ernest Whitworth, "To find average counts of yarn in a set of warps containing different counts of yarn: Divide the number of ends of single yarn of each count by its own count; add the result and divide into the total number of ends."

Example:

1 end ÷ 20	= .05
1 end ÷ 25	= .04
1 end ÷ 40	= .025
1 end ÷ 50	= .02
4	.135

4 ÷ .135 = 29.63s average count.

This method agrees with that given by "CONTRIBUTOR No. 4022", but I do not agree with the foregoing method. Basing my calculations on the fact that there are 840 yards in a pound of 1s yarn, 2 × 840 yards in a pound of 2s yarn, we have:

20 × 840	= 16,800 yards in 1 pound
25 × 840	= 21,000 yards in 1 pound
40 × 840	= 33,600 yards in 1 pound
50 × 840	= 42,000 yards in 1 pound
113,400	4

113,400 yards ÷ 4 pounds = 28,350 yards, 1 pound average.

28,350 yards ÷ 840 = 33.75s average yarn.

Or let's take one end of 20s and one end of 40s:

First method:

1 end ÷ 20	= .05
1 end ÷ 40	= .025
2	.075

2 ÷ .075 = 26.67s average counts

Using my own method:

20 × 840	= 16,800 yards in 1 pound
40 × 840	= 33,600 yards in 1 pound
50,400	2

50,400 yards ÷ 2 pounds = 25,200 yards in 1 pound
25,200 yards ÷ 840 = 30s average yarn

There is certainly no argument that 1 end of 20s and 1 end of 40s will average 30s, or by first method: Using 1 end of 10s and 1 end of 20s

1 end ÷ 10	= .10	
1 end ÷ 20	= .05	2 ÷ .15 = 13.33 average count
2	.15	

And using my method:

10 × 840	= 8,400 yards in 1 pound
20 × 840	= 16,800 yards in 1 pound
25,200	2

25,200 ÷ 2 = 12,600 yards in 1 pound
12,600 ÷ 840 = 15s average yarn.

If others have ideas on the manner of making these calculations I should like to read them in the magazine.

CONTRIBUTOR No. 6779

Fly Frame Maintenance

EDITOR COTTON:

In this age of higher machine speeds and higher operation costs, we must devise new maintenance methods to meet the changing trend. Today we cannot wait for costly machine interruptions to besiege us before prescribing a remedy; we must prevent them by a modern plan of machine maintenance.

A most satisfactory plan is a schedule of definite machine inspection laid out for each department with the various fixers trained to carry out the plan as applied to their machines. A plan of this type should include regular inspection of all vital parts of the machine and replacement when needed.

At first thought it might be said that the time spent in applying a plan of inspection would overbalance its advantages, but if applied properly it does not. The fixer will, in the long run, actually have more time and there should be no time lost at the machine because the inspection can be made while the machine is doffing or creeling, and the inspection should not interfere with normal machine operation.

More mechanical trouble is encountered at the fly frame and at the loom than at any other processes because of the high speeds, vibration, and the numerous moving parts. Therefore a plan of inspection will pay great returns when applied at these points. It will not only reduce low efficiency due to repairs, but will also reduce repair costs and will materially reduce bad work.

To explain this I will discuss this plan as applied to the fly-frame. To show clearly the advantages of such a plan I will give a concrete example of an every-day trouble and the possibilities for improvement. The builder motion of the fly-frame involves several motions, each of which should operate correctly for the best interests of the frame. Due to constant vibration the set-screws may become loose in the builder dog or skip gear, in either case allowing the skip gear to change its position. As soon as this happens the top cone gear and skip gear will begin to grind each other and in the course of a day or two will cause the frame to run over with a resulting loss of production; a new skip gear and top cone gear will be necessary, and a short doff to handle will be in evidence. During the time that the skip gear has been out of line the chances are that the frame will make a hesitant change with more or less bad work resulting, thus it can be seen what a simple check at specific intervals would have avoided.

In the application of a plan for examining fly-frames the fixers should be instructed in a method which should embody thorough inspection of the machines at certain intervals. If a complete inspection is made once a week most trouble can be avoided.

The inspection can be made while a frame is stopped for doffing, the fixer starting at the head end of the frame checking each part as he moves toward the foot end. He can start by tightening the set-screws in the driving pulley, then by moving to the gearing section, checking the horsehead and differential, reversing bevel gear and twin gears, and tightening all set-screws as he checks them.

Suppose for instance that he finds the reversing bevel gear badly worn, he can make a note of this and in the near future can replace it. However, if he permits it to run it will ruin the twin bevel gears which it drives. He then moves on, checking the cone gears and tightening the screws in the head of the top cone, which will, if allowed to become loose, let the head of the top cone become loose, resulting eventually in a smash-up and a costly repair job necessitating the removal of the top cone, a job requiring hours of time.

Cone Belt

Then comes the cone belt. If the edges show signs of new wear the cause should be investigated, or if the belt is badly worn it should be replaced at some convenient future time before it causes trouble. A bad cone belt will slip, resulting in a varying bottom cone speed which will cause untold trouble with uneven tension. Also, another item of importance having the same effect on the machine is the improper alignment of the top cone. The top cone may shift position if the collars become loose, so the inspection of the set-screws in these collars is very important.

Next comes the builder. The set-screws in the builder should be tightened, and the blocks should be checked for wear. If found to be badly worn they should be replaced soon as they cause a slow change with resulting tangled work and undue wear on the builder dog and the skip gear. The dog should be checked for wear and the set-screws tightened. The toe plate should be checked for wear and if badly worn should be replaced soon because if it is allowed to run it will eventually cause the frame to run over. The set-screws should be tightened in the top cone gear and the skip gear, and they should also be checked for wear because if one or the other is worn the one in good shape will soon wear out. The contact shaft should be tested to see that it is tight and that it will not slip, allowing the skip-gear to get out of line. This happens when the dowel pins break so these should be checked.

After inspecting these more vital parts the racks and rack gears should be checked. The chokes should be cleaned out of the teeth, and the set-screws tightened if need be.

All of the foregoing inspection can be made while the frame is stopped for doffing. Then when the frame is stopped for cleaning, the steel rolls, the stands, and the head end gearing can be checked. At this same time bad bearings and bad roll gears can be replaced.

Such a plan as is here described is practical in all respects and will pay good dividends when applied properly. Although it is not a guarantee against machine trouble, it will materially reduce it and of course will materially reduce bad work and increase efficiency at the same time.

When a machine is operating as it should, with a minimum of bad work, the operator will naturally take a greater interest in his job with a resulting increase in efficiency. The effects of this plan can be far reaching and in the end tend to make a better running plant.

CONTRIBUTOR NO. 6671

Cleaning Card Flats

EDITOR COTTON:

This is in reply to the question asked by "CONTRIBUTOR NO. 6787" on page 95 of the March issue of COTTON. He is having trouble in cleaning his card flats, and is compelled at times to use a wire stripping brush on them, which is injurious to the flats.

When the back casing on the cylinder is not set to suit the particular card it will cause dirty flats. If the flats are ground too slow and too heavy the wire will become rough and pointed improperly. Sometimes the hair brusher is not set deep enough to keep the wire polished. Often on old flats the wire is angled back at the foundation of the wire and this causes it to be angled from the heel of the wire back to the foundation, as well as from the heel to the point.

We keep our cards in good condition by using emery on the drum at a high speed and grinding light. Of course, the emery must be in first class condition. The hair brush is set deep enough to polish the wire. The comb is adjusted so that it does not rub the wire, and the back casing of the cylinder is set every time the card is ground. We remove the licker-in and set the top of the back cylinder casing by removing one flat, turning to the top of the casing, setting with the flat gauge, and then setting the bottom with the leaf gauge. The top is set to 17/1000-inch and the bottom to 22/1000-inch. By this method, the top and bottom

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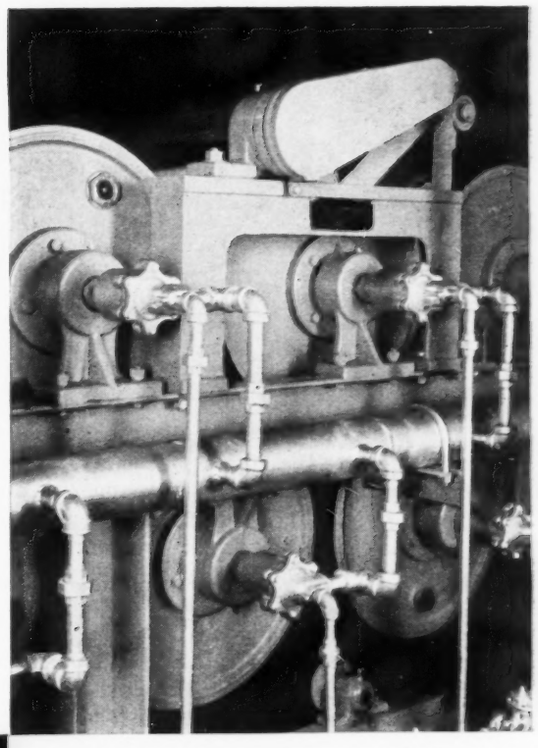

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are set on one end at a time. Some cards may need a little different setting, but it is best always to keep the top of the casing closer than the bottom.

CONTRIBUTOR No. 6821

Life of Spinning Rings

EDITOR COTTON:

I herewith submit my answers to the questions on spinning as asked by "CONTRIBUTOR No. 6845" on page 96 of the June issue of COTTON.

1. What is the life of spinning rings working continually on coarse counts up to 40s, and those on fine counts up to 150s, and at what period is burnishing of rings recommended?

The life of a spinning ring depends to a great degree on the way the ring is broken in the beginning. On medium to coarse counts, say on 20s, a ring that is broken in should last 20 years. On fine counts up to 100s, the rings should last five years without turning—on a single shift basis. There is no hard and fast rule for burnishing and in our opinion burnishing does not do much good if the ring is pitted. The ring should be watched closely and burnished when gummed and also when turned over.

2. Is the cleaning of rings occasionally with a liquid preparation advisable, and, if so, what best suits the purpose?

We do not recommend any sort of chemical cleaner.

3. What apparatus is used for removing the old oil from the spindle bolsters? We have trouble in not getting the dirty dregs entirely removed from bottoms.

The only apparatus that I have seen for removing the old oil from the spinning bolster is a hand pump. There are several different types of these pumps made. After the spindles have run for several years and there is quite an accumulation of sediment in the bottom of the case, some mills take bolsters and cases off and either wash in kerosene oil or boil out in order to remove the whole of the sediment from the bottom of the case.

4. We have a bit of trouble with "sloughing off" at the winding off at about 2 inches from the bottom; this gives us complaints from the weaving department, chiefly on 36s and 50s on ⅝-inch bobbins, 8000 r.p.m., spindle speed.

The matter of sloughing off is one that is always with us. Some mills have cams made which are built so that every traverse is locked. We believe that a three-to-one cam for combination wind will prevent sloughing off to a great degree, and many mills run their rails up slow and down fast in order to prevent it. There are a great many different ideas on the part of mill men, but the best rule to follow is to make sure that there is no delay at the top or bottom of the bobbin, that the lay is right, that a sufficiently heavy traveler is being used, and that the speed of the rail is fast enough to wind tightly.

5. Is as heavy a traveler as possible considered best for the yarn, or as light a one as possible preferred by the spinner for better spinning?

It is always best to use the heaviest traveler possible.

6. What clearance is recommended between yarn on the bobbins and the ring and what method is used to measure them? We allow ⅛-inch clearance and use 10 bobbins.

A clearance of 1/16-inch should be sufficient, which will give 1/32-inch clearance on each side of the bobbin.

CONTRIBUTOR No. 6857

Grain Side of Belt Next to Pulley

EDITOR COTTON:

"CONTRIBUTOR No. 6615" is anxious to know, on page 115 of the March 1937 issue of COTTON, which side of a single leather belt should be run next to the pulley, the grain or flesh side.

Run the smooth or grain side of belt next to pulley. This is the hair side.

It does not always pay to jump at conclusions regarding the running and handling of belts, this I do know, that when you put the flesh side of the belt next to the pulley, you increase the friction; on the other hand there are some advantages to running the belt on the grain side. Leather belting run with the grain side next to the pulley is more durable, has greater driving efficiency, and is less likely to slip.

Remember this, the smoother and thinner the belting is, the less tension is required, the faster it will run, and the longer its life will be. That has been my experience.

Put a belt with the flesh side next to the pulleys on the beater of a picker and time it. Then reverse the belt and time it again—you will be surprised. This same test may be run on the licker-in on a card, the cone belt on a fly frame, or on any motor drive.

When the grain side is not run next to the pulley, you will find that in a short time it will crack in spots and the life of the belt will be shortened.

The following is my own method for dressing and running all kinds of belting; it will increase the life of belting 50 per cent:

Make a mixture of 50 per cent tallow and castor oil and add about 5 per cent beeswax. When you receive a roll of belting, heat the solution and add the solution to both sides of the belt by painting it with a brush. When the belt is placed on the pulleys, whether it is hooked or laced, be sure that the ends are even or the belt will be stretched on one side more than on the other; this will create a variety of unseen trouble.

In order to remove the foreign matter from the face of the belt, never allow the use of a hand card or any card clothing, but instead have the men use a large piece of rubber; packing from the engine room is what I use. This gives the belt a smooth finish, after which I add a little castor oil. This should be done weekly.

Knowing *where* to buy belting is the greatest consideration.

When buying leather belting, first obtain a sample large enough to double it with the hair side out. If it should crack, reject it. If it shows a spongy appearance it should be condemned.

Next, the strip should be tested for quality by immersing it in strong vinegar. If the leather has been tanned properly and is of good quality, it will remain in vinegar for days without any alteration, growing darker in color. If it has not been tanned properly the fiber will swell and the leather will become softened, turning it into a jelly-like mass.

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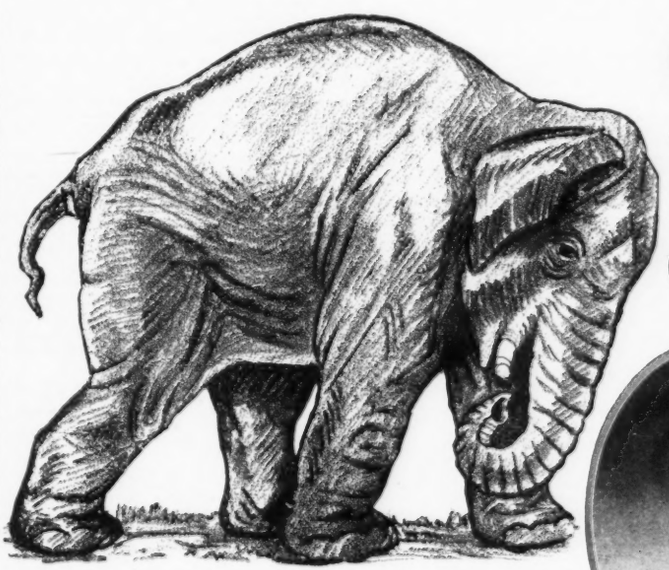

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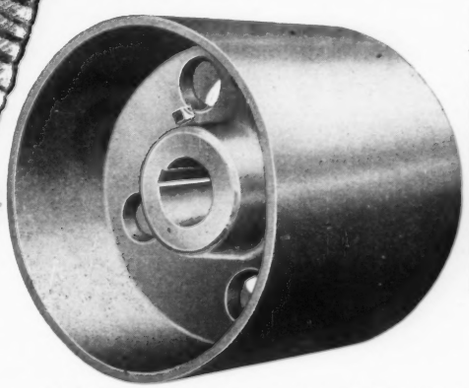

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248. Design Wheels for Brinton Knitting Machines—16 page illustrated booklet which gives helpful information on design wheels for Brinton knitting machines. A copy of this booklet should be in the hands of every knitter. H. Brinton Co., Philadelphia, Pa.

251. Brown Thermometers and Pressure Gauges—New 71 page book illustrating and describing the Brown indicating, recording and controlling thermometers and gauges. Explaining their many advantages to the textile plant, this valuable book should be in the possession of every mill executive and department head. The Brown Instrument Co., Philadelphia, Pa.

253. Brown Air-O-Line Controllers—This booklet will prove invaluable to the men in charge of dyeing, finishing and slashing, as well as the textile executive. 32 illustrated pages describing the various Brown Controllers. The Brown Instrument Co., Philadelphia, Pa.

258. Automatic Overhead Cleaner for Spinning, Winding, Warping and Twisting—24 page booklet showing the new American MonoRail automatic cleaner in operation on MonoRail track circut over Spinning, Warping, Winding, Twisting, etc. This cleaner incorporates a new scientifically designed blower producing a whirling column of air directed and controlled so that it prevents accumulation of fly with no harm to roving. The American MonoRail Company, Cleveland, Ohio.

259. Cotton Conditioning with Texspray Compound—18-page booklet describing the Texspray method of cotton conditioning. It has been proven that this method will save money, increase production, increase flexibility of fibre, eliminate static and reduce fly and dust. The Texas Company, New York, N. Y.

260. Lubrication—This attractive booklet contains valuable and interesting articles on loom lubrication and also on spinning design and the function of spindle oils. The Texas Company, New York, N. Y.

261. The Brown Moist-O-Graph—16 page booklet describing the Brown Moist-O-Graph which measures, records and controls the moisture content of cotton warp yarns. The Brown Instrument Company, Philadelphia, Pa.

264. American Pressed Steel Trucks—16 page illustrated catalog describing the American line of trucks and industrial truck wheels. American Pulley Co., Philadelphia, Pa.

266. Energy Drive—The Latest Improvement in the Art of Weaving—7-page illustrated booklet describing the sensational new energy drive for looms. Complete with specifications and actual installation results. Power Transmission Council, Inc., Boston, Massachusetts.

269. Stainless Steel Equipment for the Dyeing and Textile Industry—Attractive four-page folder describing the Blickman line of dyeing equipment. S. Blickman, Inc., Weehawken, N. J.

271. The New American Adjustable Diameter Wedgebelt Pulleys—Illustrated leaflet describing the American adjustable diameter sheaves designed to produce the best performance in all types of V-belt driven textile machinery. American Pulley Co., Philadelphia, Pa.

272. Where to Buy Monel Metal Textile Equipment—Attractive booklet which lists the names and addresses of experienced fabricators of Monel Metal equipment for the textile mill. The International Nickel Company, Inc., 67 Wall St., New York, N. Y.

273. Debevoise Maintenance Paints—38-page illustrated manual describing and illustrating the Debevoise line of paints for industrial use. The manual features a complete line of paints for the interior and exterior of textile plants and mill villages. The Debevoise Company, 968 Grand St., Brooklyn, N. Y.

275. Vacuum Lint and Dust Collector—attractive folder describing the patented vacuum lint and dust collector for automatic spoolers, warpers nappers and textile machinery. The Textile Shop, Spartanburg, South Carolina.

276. Continuous Vulcanization of Transmission Belting—12-page booklet containing facts based on data assembled during the development of this new principle of belt manufacture and the performance of the product in actual service. Boston Woven Hose & Rubber Co., Cambridge, Mass.

277. Bulldog Rubber Tension Roll Covering—attractive four-page folder describing the new scientifically correct product designed for taking off all synthetic fabrics, natural silks and fine cotton goods. Boston Woven Hose & Rubber Company, Cambridge, Mass.

278. Textile Testing Laboratories—a 10-page illustrated booklet describing a modern textile testing laboratory and pointing out the necessity for laboratory air conditioning systems. Ask for bulletin 136, Parks-Cramer Co., Fitchburg, Mass., and Charlotte, North Carolina.

279. When Cleaning's Automatic, a Spinner's Free to Spin—a 10-page illustrated booklet dealing with the Parks automatic traveling cleaner. Ask for bulletin 1036, Parks-Cramer Co., Fitchburg, Mass., and Charlotte, N. C.

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281. Sealed—Showing how dirt and dust shorten life and destroy accuracy of bearings and importance of sealed bearings to keep dirt out and to keep lubricants in. New Departure Division, General Motors Corp., Bristol, Conn.

283. Postal Guide and Envelope Catalog—Answers every question regarding mailing, postal and shipping rates. Atlanta Envelope Company, Atlanta, Ga.

284. Morton Nickel Iron Quick Opening Handle Gate Valve—Illustrated leaflet describing the new Morton Valve for dyeing machines, pipe lines, steam and water lines, boiler blower valves and throttle valves. Morton Machine Works, Columbus, Georgia.

285. An Unusual Unit of Equipment—Attractive folder describing and illustrating the Moccasin principle of oil distribution. Moccasin Bushing Co., Chattanooga, Tenn.

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287. New American Pulley Motor Base Catalog—an attractive new illustrated catalog describing in detail construction and application of new tension control motor base. Includes data comparing performance of drives with and without tension control motor base and applications are shown for both flat and v-belt drives. American Pulley Co., Philadelphia, Pa.

288. Nopco Softeners and Wax Finishes—14 page booklet describing the various Nopco Products for finishers of cotton goods. National Oil Products Co.., Harrison, N. J.

289. Caustic Soda Bulletin—a data and reference book designed for the user of caustic soda. Complete with charts, drafts and formulas. Pennsylvania Salt Mfg. Co., Philadelphia, Pa.

290. Hyatt Roller Bearings on Textile Machinery of All Kinds—34 page booklet which describes and illustrates how Hyatt bearings are being applied to textile Machinery. Hyatt Bearings Division, Newark New Jersey.

291. Wolf Products for the Textile Trade—Illustrated booklet describing the Wolf line of chemicals for the printing, dyeing, sizing and finishing of all textile fabrics. Jacques Wolf & Co., Passaic, N. J.

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11. Whitinsville Rings—16 page illustrated booklet describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

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30. Lubrication of Textile Machinery—32 pages illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

38. Sleaziness in Full Fashioned Knitting—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machines with general information on subject of full-fashioned knitting.)

55. Interpretation of Analysis for the Layman—An eight page booklet explaining what the various items used in fatty oil and sulfonated oil analysis

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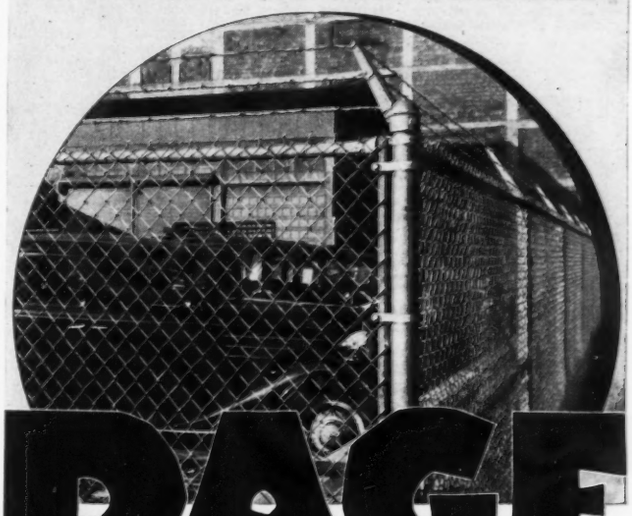

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72. **The Merrow Butted Seam**—A 16-page booklet defining and illustrating the Butted seam, describing its properties and outlining some of the advantages to be gained by its use in Textile fabrics. The Merrow Machine Co., Hartford, Conn.

77. **Bulletin S 200**—Illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

88. **Dayton Cog Belt Catalog**—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

106. **Cotton System Warp Sizing on Multiple Cylinder Machines**—a folder showing the advantages of this type of machine in making warps of acetate and other synthetic yarns and spun silk. Charles B. Johnson, Paterson, N. J.

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109. **Some Properties of Starch and Dextrine**—Explaining certain fundamental properties of starch and its derivatives and their action when heated and agitated. Stein, Hall & Co., 285 Madison Ave., New York City, N. Y.

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128. **Houghton's Hand Book for the Hosiery Dyer**—This book contains the result of 69 years of experience in research and development of processing materials for the textile industries, together with a wealth of other data useful to every hosiery dyer. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

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139. **Textile Detergents—Theory of the use of alkalis and control of pH**—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergent in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

141. **V-Belt Engineering Data Book**—Over 50 pages of pertinent engineering information including data on selecting a V-belt drive design of special V-belt drives, numerous standard tables, charts and belt and sheaves list prices. Manhattan Rubber Manufacturing Div. of Raybestos-Manhattan, Inc., Passaic, N. J.

152. **Plant Checkup List**—Crane Co., 836 South Michigan Ave., Chicago, Ill.

154. **Johnson Bronze Bulletin No. 340**—showing over 600 sizes Johnson general purpose bronze bushings. Johnson Bronze Co., New Castle, Pa.

155. **Link-Belt Catalog 1574 on the P. I. V. Gear**—giving details of this positive variable speed control. Link-Belt Co., 307 N. Michigan Ave., Chicago, Illinois.

156. **Link-Belt Engineering Data Book No. 125**—showing features and giving engineering data on Link-Belt silent chain drive. Link-Belt Co., 307 N. Michigan Ave., Chicago, Ill.

163. **Roto-Koner**—Bulletin describing the new No. 44 Universal Winder, known as the Roto-Koner for winding knitting yarns, which has many new and distinctive features. Universal Winding Company, P. O. Box 1605, Providence, R. I.

164. **Johnson Rotary Pressure Joints**—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instructions, types, sizes, dimensions and prices. The Johnson Corp., Three Rivers, Mich.

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183. **Schieren-izing**—describing leather belt manufacture from the selection of hides through the various processes to the final tests, also showing illustrations of belts with unusually long service lives. Chas. A. Schieren Co., 31 Ferry St., New York, New York.

184. **Speed Control Handbook T-35**—new reference book in variable speed control, said to be the most complete and helpful book on this subject ever published, 112 pages and more than 200 illustrations of interest to every production executive, purchasing agent, superintendent, overseer and master mechanic. Reeves Pulley Co., Columbus, Ind.

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188. **F-7 Feeder Bulletin** — Describing the better blending that is secured and the important cleaning operation that is added by using F-7 feeders in place of bale breakers. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

187. **The Wildman Single-Head Full-Fashioned Hosiery Machine**—Literature on request from the Wildman Mfg. Co., Full Fashioned Division, Norristown, Pa.

188. **Form 374**—This form enables you to gather your own cost data on your sewing machines and determine whether new Union Special Machines will show big savings. Furnished free by Union Special Machine Co., 400 No. Franklin St., Chicago, Ill.

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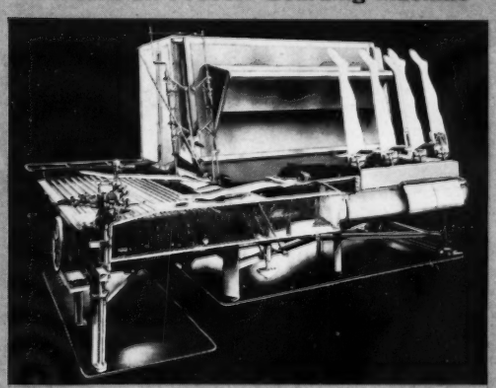

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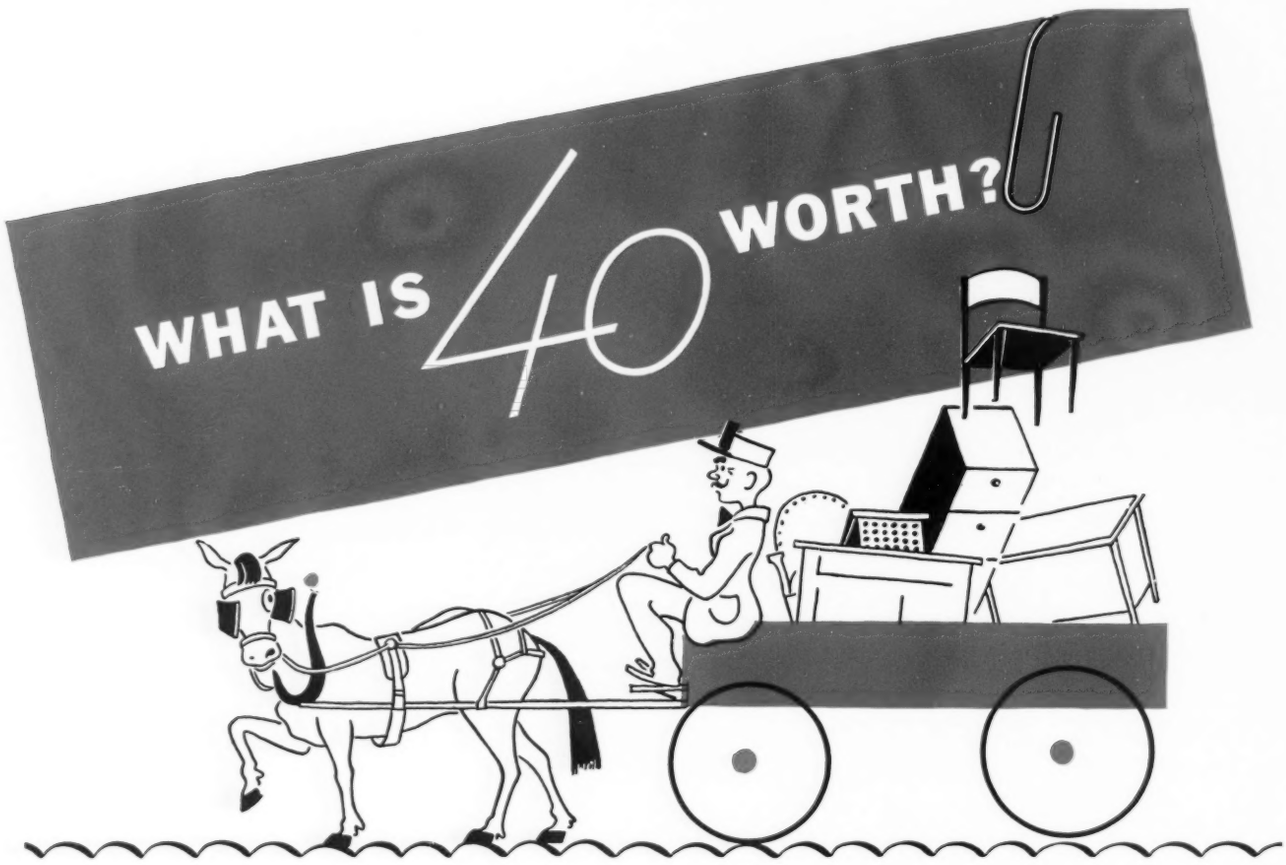

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The Maintenance and Fixing of Full-Fashioned Hosiery Machines

Shogging Assembly and General Discussion of Cam Shaft

By Arthur J. Cobert

THIS is the eleventh installment* of a series of articles on full-fashioned machine maintenance, being prepared especially for COTTON by a competent mill man. Thus far the vertical motion of the needles, the horizontal motion of the needles, the function of the regulator, formation of the stitches, sinker-head and knock-over bar analysis, jack head and slur-cam analysis, adjustments in tension, the narrowing machine settings, the coulier motion, care of frictions, shock absorbers, carriers and narrowing head assembly have been discussed. This article concerns the shogging assembly and cam shaft. The author will take up any particular phase of fixing you may request, or will answer practical questions submitted to him through COTTON.—The Editors.

UP UNTIL NOW we have considered the various motions of the full-fashioned machine without discussing the primary source of motive action, the cam shaft and the different cams which give the machine the motions necessary to knit the fabric. It is remarkable, when one stops to consider, that the intricate movement of the needles is accomplished by only two cams, the presser and the needle bar cams. This same fine mechanical precision is carried throughout the entire machine, constituting a degree of accuracy and close adjustment not likely to be found in any other type of machine.

The new high speed machines of today have larger cams than the old slow speed type, making for smoother action, as these larger cams do not require as sharp high point and hollows as the smaller cams. The same amount of action is spread over a larger circumference eliminating the necessity of such abrupt movement. Much depends upon strong tension of the springs to hold the rollers against the cams in high speed, consequently harder cams and rollers are necessary to prevent wear than on the slow speed machines.

As stated in an earlier article of this series, the shifting type of cam shaft and double cams constitute one of the major features of the full-fashioned machine. When the cam shaft is shifted to the narrowing position, the entire motion of the machine is changed from the stitch forming movement to that of the narrowing movement. Here the shogging assembly plays an important part. Most types of machines are equipped with a chain upon which is fastened buttons to trip the shogging assembly when it is desired to make a narrowing, the buttons being spaced on the chain to form a pattern or style as needed. When one of these buttons comes under the trip lever of the shogging assembly, the shogging roller is released, falling into position against the right shogging cam. As the cam shaft turns, it is forced over to the right by virtue of the pressure exerted between this roller and cam and its own action. It is moved the width of a needle bar cam, shifting all the rollers of the machine to the adjoining cam. It remains in this position for almost a complete revolution during which time the narrowing motion takes place. The chain is then moved one link allowing the button to move from under the trip lever. This permits the shogging roller to move back to its original position by the action of an auxiliary cam and at this moment it contacts the left shogging cam, returning the cam shaft to the stitch forming position. This completes the shogging movement.

All makes of machines have standard gauges for setting the shogging cams and these should be used whenever possible. Nevertheless they can be adjusted without a gauge and one method of doing so will now be explained.

Gauging the Point of Shift

Consideration should be given first to the position of the rollers in relation to the center of the cams. The machine is designed to operate with the rollers in the center of the cams providing the shogging cams are in good condition and adjusted properly. If any deviation from this position must be made, it is better to favor the inside edge of the stitch forming cams so that when the cams are shifted the rollers will be insured of traveling on the narrowing cams without striking the edge of the working cams. This can be controlled by the adjustment of the shogging cams horizontally. If the cam shaft appears too much to one side, simply loosen the shogging cams and tap them over to the desired side which will force the cam shaft over upon turning it several revolutions. When the shogging cams are set properly there should be about 5/1000-inch clearance between the roller and cams to prevent jamming or excessive wear. More clearance than this prevents full shifting of the cam shaft, shortening its thrust in direct ratio to the amount of clearance. Hence, the longest shift is accomplished when the clearance between shogging roller and cams is at a minimum.

*The first installment appeared on page 103 of the July 1937 issue, the second on page 117 of the August issue, the third on page 119 of the September issue, the fourth on page 113 of the November issue, the fifth on page 131 of the December issue, the sixth on page 111 of the January 1938 issue, the seventh on page 109 of the March issue, the eighth on page 137 of the April issue, the ninth on page 110 of the June issue, and the tenth on page 101 of the July issue.

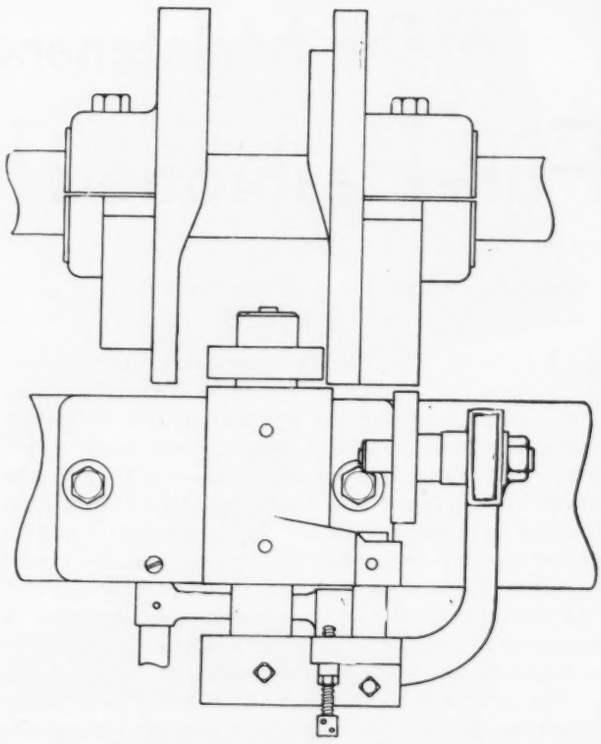
The point of shift can be gauged by watching the needle bar rollers when the cam shaft is starting to move over. Adjust the right shogging cam so that the cams will start to shift just as early as permissible without the needle bar rollers striking the edge of the narrowing cams. If the machine has been run any at all, previously, the roller marks can be traced on the shifting point of the cams and may be used as a guide for setting the shogging cams. In returning, the cam shaft should be made to shift in plenty of time so as to prevent the rollers from striking the edges of the stitch forming cams. Needless to say that the shogging cams must be well tightened as these cams receive a terrific amount of pressure while in action.

Another point to watch in timing the shogging cams is the action of the clutch. Too late shifting of the cam shaft will carry the clutch and gear around too far, causing the coulier cam to carry the slur-bar beyond its limit of stroke and to partially return it. Also if the shogging cam does not carry the shaft far enough the clutch will not release properly. When completely released there should be some clearance between the two portions of the clutch, approximately one-sixteenth to one-eighth of an inch. If the shogging motion is correct and the clearance at this point is not, the stationary portion of the clutch should be loosened and moved to the desired clearance.

All types of machines have a fork which holds the pinion gear at the proper point of mesh with the draw gear. Correct adjustment of this part is important for maximum service. The gears should mesh about two-thirds the depth of the teeth and a little tolerance should be felt when the pinion gear is oscillated by hand. Closer setting of the fork than this will only result in excessive wear of the gears. This fork is important in that it holds the driven end of the clutch in a constant position during the narrowing operation.

In conjunction with the shogging assembly, a cam brake is mounted on the cam shaft for the purpose of holding it from vibrating horizontally when it is shifted in high speed. This brake aids in the quiet operation of the clutch during the narrowing motion. It should be checked from time to time for if the brake becomes loose serious damage could result. On some types of machines an air brake is utilized for this purpose to great advantage. Silent and vibrationless action of the cam shaft is assured. The tension of the cam brake cannot be definitely stated here due to the many different kinds of brakes in use.

On certain cam shafts, those on which the drive gears are not pinned or keyed to the shaft, it is possible for the shaft to become twisted, throwing the cams out of line. This condition is generally caused by some sort of a smash in which one end of the machine becomes jammed in high speed. The one drive gear will slip and remain in this position creating a twist in the shaft almost unbelievable for so heavy a part. Sometimes this is great enough to hold the needles on one end of the machine part of the way down while the other end remains in the normal position. Releasing the tension on the one gear will usually suffice to bring the cam shaft back in its original position. This should be checked with a cam gauge for positive accuracy. Start with the needle bar cams and check all of them for setting to be certain that the shaft is true. Several different working cams should then be checked, such as the back catch bar, as it is possible that certain individual cams are off gauge, rather than the entire shaft twisted. It is good policy to check the cam shaft for this difficulty when unusual cutting or other trouble arises, as this can be the cause of any number of ailments.



Cam shaft shifting assembly, showing left and right shogging cams with shifter roller in normal position . . . . . .

Gauging the Cams

In the process of gauging cams over the entire machine, it is always well to start with the needle bar cams, using this motion as a standard for all other motions. From this point, all the rest are relative and should be treated as such. After setting the cams with the standard gauge it is always well to re-check the setting of them with a small template made for this purpose, measuring the distance from the roller to the line on the cam. This gauge can be made very small, approximately three inches in length, one end resting between the roller and cam and the other end indicating where the line should come. After aligning one set of cams with the standard gauge, place the small template in position on one cam and turn the cam shaft until the line is directly on the indicator. Then check the rest of that line of cams for accuracy, using the average cam as the correct setting. Sometimes a few of the arms on which the rollers are mounted are

Proved Performance in Specially Finished Needles

With Royersford Specially Finished Needles, you pay no premium for superior performance. Greater speeds, more firsts, fewer seconds and a clearer, sheerer fabric are a result of a standard series of tests, the most exacting ever devised for the control of production in needle manufacture. Because special finishing is a "standard" operation, the cost of Royersford Needles is lower than ever before possible for anything approaching this careful workmanship.

The prescription for better knitting

ROYERSFORD NEEDLE WORKS, INC., ROYERSFORD, PA. : : Spring-Beard Needles, Narrowing Points, Picot Points, Lace Points, Welt Hooks, Transfer Points, Stand Points, Bent Points, Dull Points : : Sinkers, Dividers, Jacks, K. O. Bits : : Thread Holders, Carrier Tubes, Welt Bar Hooks, and Eyelets, Strap Cleats, Plate Hooks, Footer Hooks, Strap Hooks : : R.F. Clamps and Straps, Legger Straps, Tension Wires, Snapper Springs ,Mend Hooks—for all machines : : *For Glove and Underwear Industries*—Milanese, Tompkins and Tricot Needles, Milanese and Tompkins Guides, Tram Travelers : : All development work strictly confidential. SOUTHERN REPRESENTATIVE: Robert Baker, O. Henry Hotel, Greensboro, N. C.

ROYERSFORD NEEDLES

slightly longer or shorter than the rest, changing the position of the roller in relation to the cam. Setting the cams in this manner assures all of the rollers striking the high points of the cams simultaneously which makes for better performance and less vibration of the machine.

Cam bits are placed on the various cams in strategic positions, these being made adjustable to compensate for wear. They should not be adjusted unless absolutely necessary. Too often these bits are raised or lowered when some other motion of the machine is at fault. The same holds true of filing cams. More often as not, the entire motion is off gauge rather than a particular spot and filing of the cams at this point is then the wrong procedure. The machine builder knows the correct amount of motion required of a particular cam and much thought and study should be given before any attempt is made to file cams.

Certain cams on the machine do not generally have any gauges for setting, these being adjusted with the eye in relation to the motion required. Snapper cams, draw off roller take-up cams, picot cams and narrowing rod shifting cams are some that do not have gauges as a rule.

Snapper cams should usually be set so that the extreme hollow is reached when the stitch is free of the sinkers, just before entering the knock-over bits. The snappers should be open slightly at this point to prevent the thread from pulling out the selvage stitches while they are free before entering the knock-over bits. Sometimes a deviation from this setting is necessary, but it will be found a good place to start.

In regard to the draw off roller take-up cam, the greatest amount of tension release should come while the narrowing fingers are delivering the stitches back to the needles. This cam adjustment is not very sensitive within a reasonable scope. Narrowing rod and carrier rack shifting cams are very easily adjusted. The start of the shift depends entirely upon the length of time available for this operation. The narrowing points should not commence to move until they are clear of the knock-over bits, but then should start to move immediately, to insure their full movement before entering the knock-over bits upon the delivery. This is a paramount importance.

The picot cam, as a rule, operates exactly as the narrowing rod shifting cams and can be adjusted accordingly, as long as the delivery is watched.

On footers, the covering plate cam must usually be adjusted with the eye. This setting depends primarily upon the moment the plates start to move away from the fingers on the take-off or first dip. The covering plates must remain in until the stitches are absolutely free of the narrowing points and then start out, in plenty of time to prevent the plates from striking the knock-over bits. It is also good policy to watch the plates as they swing in on the first dip. They must be in completely before the edge of the plates are level with the needle tips.

Good knitting machine performance depends in part upon the smooth action of the cam shaft. Anything that may be done to aid its quiet operation will be reflected in the work produced and life of the machine. Shogging cams that are badly worn will cause the cams to shift too rapidly with a consequent jar greater than a machine can stand for any length of time. Replacement of these parts when such time arrives is good insurance for better production and higher quality merchandise.

Polishing Full-Fashioned Needles and Sinkers

EDITOR COTTON:

We can not stress too highly the importance of polishing the needles and sinkers regularly on full-fashioned hosiery machines to obtain and insure smooth running. When needles and sinkers become rough and pitted from lack of a good needle oil or oil mixed with some sort of polishing ingredient, numerous troubles are encountered which otherwise would not be present regardless of the age of the machine. In fact, the older the machine the more necessary it is to keep the insides oiled and polished. It is granted that new equipment is bound to run for a certain length of time with no trouble from this source but it does not take long for roughness to set in if no care is taken to keep the fault eliminated. One of the first and most common signs of roughness is the hanging of the stitch on tips of the sinkers as the needles come off on their downward motion to deliver the stitch to the knock-overs. It almost appears as though the catch bar is late or the needles too are low, but invariably it is nothing but rough sinkers and needles causing the trouble. The evil at this point will cause no end of bad work if not rectified at once.

On numerous occasions the footer operator will have trouble "hanging up" in the toe, as though the machine was not adjusted properly for press. We suggest polishing before any adjustment is made on the machine because roughness is often the cause of this trouble. At other times the footer will experience more than a normal amount of "break outs" during the transfer which also may be traced to the same source. Does it not seem logical that the machine itself has not gone out of adjustment if it has been operating successfully over a period of time? Is it not a sane procedure to polish the needles and sinkers first before trifling with the machine or inserting new parts? A few sinkers here and a few sinkers and needles here and there runs into money at the end of the year if at the same time the fault could have been overcome in a cheaper and simpler way.

We are all aware that every hosiery mill uses needle oil but on some occasions it is used too sparingly. This is not always due to a shop rule prohibit-

(Continued on page 117)

"The flower that follows the sun does so even in cloudy days."
LEIGHTON

". . . . Tremendous strides have been made in improving the quality of full-fashioned stockings. A few years ago, a clear fabric was the exception and brought a premium price. Today a clear fabric is the rule and it is difficult to find a market for streaked merchandise *at any price!* . . . ."

TEXTILE MACHINE WORKS • READING, PA

An Eye on the Knitting Mills

J. H. McEwen, vice-president of the McEwen Knitting Company, Burlington, N. C., is the president of the new Dothan (Ala.) Silk Hosiery Company, a $300,000 concern. P. K. Holt, secretary of the McEwen Knitting Company, will be in charge of the Dothan plant and Ed L. Rackley, chief mechanic at the same mills, will be in charge of production. It is said that a few employees from the Burlington plant will be transferred to the Alabama mill. Silk will be thrown for this mill by the Grabur Silk Mills, Graham, N. C.

The new plant of the Allen-A Company, New Ipswich, N. H., has been completed according to Arthur S. Thayer, president, and operations will begin early in the fall. The company will manufacture men's hosiery, underwear, sweaters, and sportswear in the new plant.

Baker-Cammack Hosiery Mills, Burlington, N. C., have purchased the machinery and equipment of the Penn Hosiery Mills of the same city, and have moved the machinery into the Baker-Cammack buildings for operation.

According to reports, new single-unit full-fashioned hosiery machines have been purchased by Davenport Hosiery Mills, Inc., Chattanooga, Tenn.; SeLing Hosiery Mills, Nashville, Tenn.; and McCrary Hosiery Mills, Inc., Ashboro, N. C.

Adomar Silk Mill, Peckville, Pa., has been purchased by Samuel Kassow Company, manufacturers of silk hosiery yarn in Philadelphia, who will install new equipment. The main office and factory will continue in Philadelphia.

The Barber Hosiery Mills, Inc., Mt. Airy, N. C., was ready for operation about the middle of August; it will manufacture infants' and misses' anklets. T. C. Barber and W. F. Carter are directing operations.

It is reported that a full-fashioned hosiery mill will be located at Hattisburg, Miss. Further reports have it that this is to be a unit of Julius Kayser & Co., though this fact has not been confirmed.

Unique Knitting Mills, Acworth, Ga., has received 10 new knitting machines to be used for the manufacture of high grade rib hosiery and anklets. Five additional machines have been ordered for delivery this fall.

Grabur Silk Mills, Graham, N. C., will increase the size of the plant so that 26,000 pounds of hosiery yarn can be thrown weekly and the number of employees increased from 275 to approximately 500.

The Hickory (N. C.) Fabrics Company is a new concern which is the successor to the Hickory Weavers, Inc., which concern was recently bought by H. C. Cline, local building contractor.

Rodgers Hosiery Mills, Athens, Ga., has been granted a permit which will double the present capacity of the plant, which makes full-fashioned hosiery.

It is understood that the new hosiery mill established at Whiteville, Va., by Albert H. Carpenter and C. C. Carpenter of Marion, N. C., is ready for operation.

Waycross (Ga.) Manufacturing Company, which began operations making full-fashioned hosiery some time ago, is adding workers. Roy E. Degan is manager of the plant.

Fremont Hosiery Mills, Thomasville, N. C., has increased the storage space and enlarged the boarding room. Children's and misses' anklets are manufactured.

Piedmont Knitting Company, Gordonsville, Va., has been granted a charter to operate a hosiery mill. Maximum authorized capital is $25,000. Martin Hoesel, Winchester, is president.

Selinsgrove (Pa.) Knitting Mill has installed four additional knitting machines, and according to Otto Keuhnert, owner, 12 more machines will be put into use soon.

Operations at the new silk throwing plant in Union, Miss., were scheduled to begin August 1. The plant is operated by Donald J. Smith of Pennsylvania.

It is reported that a full-fashioned hosiery mill will be erected and operated at Independence, Va., and that the promoters of it also operate mills at several other places.

The A. W. Wheeler & Son, Inc., full-fashioned hosiery mill, Brevard, N. C., is enlarging the plant and additional machinery has been purchased to be ready for installation.

Empire Knitting Company, Philadelphia, it is reported, is moving its machinery and equipment to Statesville, N. C., and will begin operations manufacturing sweaters.

Carpenter Hosiery Mills will be the name of the men's hosiery concern in Wytheville, Va., formerly the Inspiration Hosiery Mill, which was purchased by Marion, N. C., interests.

Biltmore Hosiery Company, Inc., manufacturer of full-fashioned hosiery, has added six machines, bringing the total to 18 machines.

Fayetteville (N. C.) Knitting Mills have purchased additional full-fashioned knitting machines from Robert Reiner, Inc.

Trayler Corporation, New Braunfels, Tex., manufacturers of full-fashioned hosiery, is being sponsored by Wm. F. Mueller Corporation, Robesonia, Pa.

The branch plant of the Bryan Hosiery Mills, Chattanooga, Tenn., located at Quitman, Ga., has begun operations.

Puritan Knitting Mills Corporation, Altoona, Pa., are making plans for substantial expansion.

Plans have been completed for moving the mills in Dayton, Tenn., owned by W. R. Spivey, to Helena, Ark.

Hoover Hosiery Mills, Concord, N. C., have purchased a heeling machine from Robert Reiner, Inc.

Roanoke Weaving Mill, Vinton, Va., has built a new warehouse for storing surplus equipment.

Albany (Ga.) Manufacturing Company will merge with the interstate Hosiery Mills, Inc., of Delaware.

Work has already begun on the building to house the Belmont (N. C.) Throwing Corporation.

Asks for WPA Production on Old, Idle Machinery

A plan under which old, idle hosiery machinery would be used to manufacture stockings for people on relief rolls was presented to Aubrey Williams, assistant administrator of the Works Progress Administration in Washington, by representatives of the American Federation of Hosiery Workers, Branch No. 1, Philadelphia. The plan calls for the immediate employment of some 7,000 hosiery workers in the Philadelphia area at WPA earning rates on a production basis that would not interfere with union operations or the manufacture of hosiery for general distributive purposes. It was said at the time that approximately one-half of the 15,000 hosiery workers in the Philadelphia district are unemployed.

It was indicated that WPA action, is contingent upon an immediate appropriation by the Pennsylvania legislature of about $100,000.

KNITTING KINKS

A Review and Discussion of Horizontal Striping Attachments for Scott & Williams Machines

(The Latest Chain Striper)

IN PREVIOUS ISSUES OF COTTON we have described the first three S & W striping attachments, and now we come to the fourth attachment, the very latest S & W chain striper, so called because yarn selections are controlled by chain links instead of the usual striper drum cams. This device is a very flexible striping attachment; with it the machine fixer can actually change stripe patterns on a dozen machines in less time than he could change one machine equipped with a 6-track or 24-move striper drum. That costly and much detested job of arranging striper drum cams, evening yarn laps, and assembling leg chain links to get the proper amount of idling for various widths of stripes has been boiled down to the simple task of assembling a short striper chain and placing it on a chain sprocket when the latest S & W chain striper is used. In fact, the fixer could have his chains assembled for any number of different stripe combinations and he could change from one to another as fast as our present day buyers and jobbers change their minds, and that's going some.

Today, more than ever, the seamless hosiery manufacturer must find ways and means to reduce costs. When the new legislation goes into effect, we have but two alternatives—prices must advance or costs must be reduced. A combination of both would still keep us definitely out of the excess profits tax brackets. At this writing, we are not thinking of *profits*, but rather of trying to prevent further *losses*.

This new striping attachment will help to reduce costs materially and since it will produce any conceivable stripe pattern, it should open the door to new business. The device shown in the accompanying illustrations is applicable to the Model ES Scott & Williams machines; attachments for other models are also available.

For the benefit of the reader that has not had an opportunity to see this attachment in action, illustrations and instructions as supplied by the company are given herewith.

Chain Striper for Model ES 6-Finger Machine

This device constitutes a means of producing a variety of yarn changes for horizontal stripes by means of a pattern chain. This chain-controlled device has the advantage of being able to produce a great variety of patterns because the cycle of the pattern is only limited by the length of the chain, and the changing of the pattern design is reduced to the simple task of rearranging the pattern chain links. It consists of several mechanisms, the pattern chain and means of racking it, Fig. 1. The device for starting the rack wheel in motion, Fig. 2. The device for idling the rack wheel. The means of selecting the thrust bar selections, Fig. 3, mechanism for controlling selected thrust bars and detent controlling parts, Fig. 4.

The pattern chain is reeved over a sprocket 101826 fastened directly to a rack wheel 303016, which is racked continuously, except when idling mechanism is brought into play, by an eccentric shaped cam 203915 attached to the bevel gear.

The racking lever 101805 which operates the foregoing mechanism is in motion at all times when the machine is running; it is connected to a follower lever 101889, mounted on the clutch shipper shaft. This follower rides directly on the face of the eccentric cam attached to the hub of the bevel gear.

The device employed for starting and idling the rack wheel by means of the regular machine drum and chain is as follows: Mounted on the same shaft as the rack wheel is a pawl guard 203702 which when the rack wheel is to be idled, is brought into a position preventing the racking pawl 203716 from engaging the rack wheel teeth. This pawl guard is actuated by cams on the main drum at two different parts of the stocking, first for the heel and later for the toe; after the heel the racking is resumed due to the idling drum lever dropping off drum cam, however, at the toe when the pawl guard has been put in position by the drum cam it remains there until it is released by a main chain link after the transfer. This is caused by cam on pawl guard lifter lever, Fig. 2.

This means of controlling the selection is shown in Fig. 3; as will be noted the rod which carries the selector finger moves in a horizontal plane for selection. The amount of travel of this bar is determined by the height of the chain link which actuates it. With this attachment having three selections, there are three different height chain links, each individual height being assigned to the control of one selector.

When the chain reading lever 101806 rides up on a chain link its motion is transmitted to the selector lever 101817 by cam 203711. The selector lever being in contact with selector block 203692 on selector rod carries this rod with it to right or left, dependent on height of chain link in action.

When the desired controller has been selected as per the foregoing, the following action takes place:

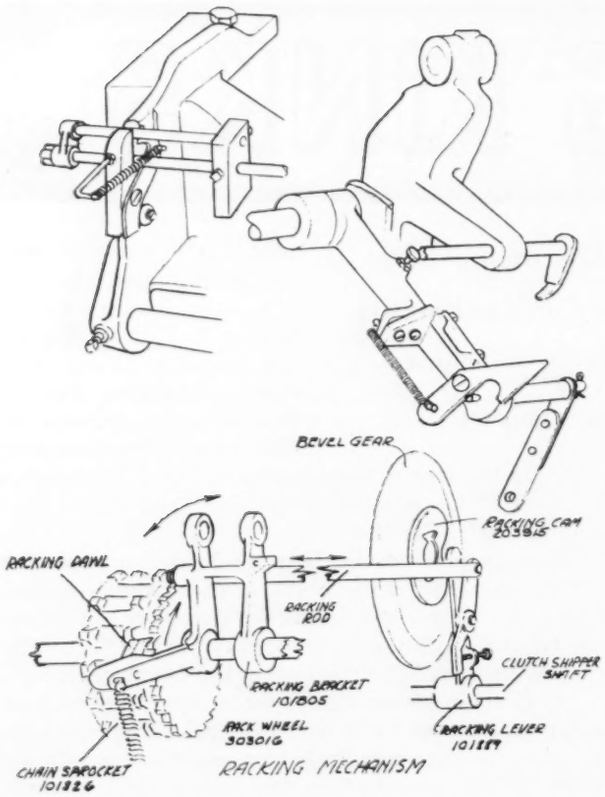


Fig. 1

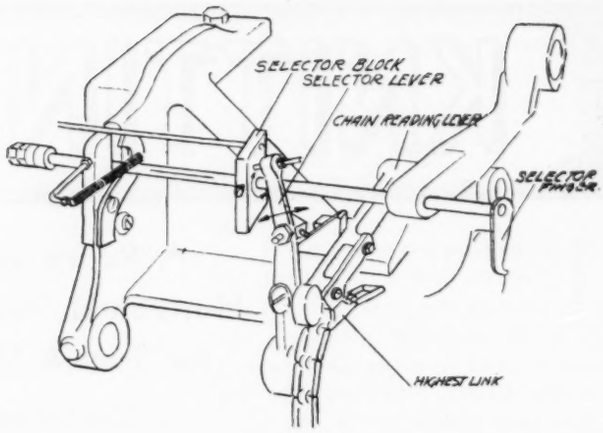


Fig. 3

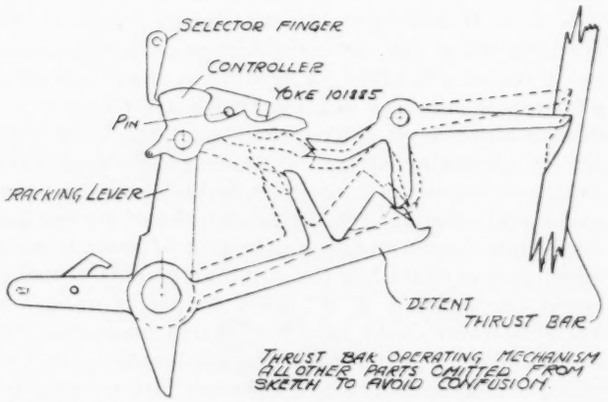


Fig. 4

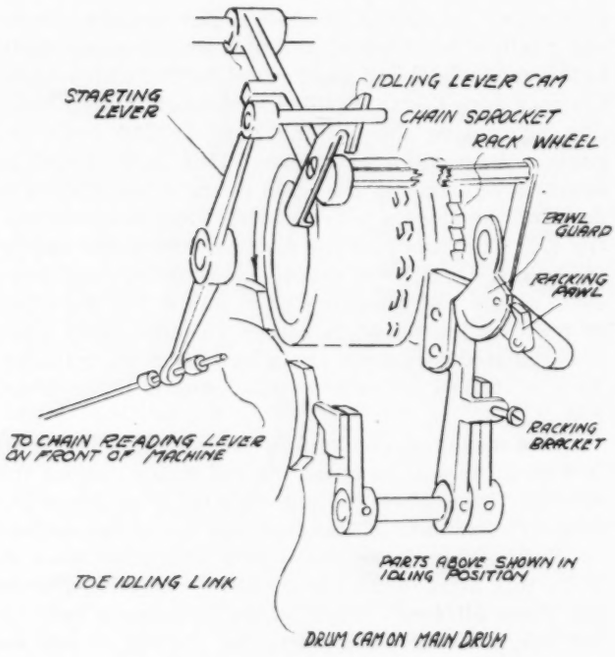


Fig. 2

The racking bracket 101805 which carries the controller being in reciprocation motion at all times, it brings the selected controller in contact with the selector finger at each revolution of the cylinder.

The controllers are so arranged in the movable yoke that supports them that when any selected controller is contacted by the selector finger such controller is tipped forward until it strikes the yoke pin, after which yoke and all are carried forward. This causes the selected and unselected controllers to be carried forward in the formation shown in Fig. 4.

The controller shown "dotted" in Fig. 4 has been selected depressed and is in position where further forward motion will press down the detent and release the thrust bar operating lever and allow the thrust bar to lower the selected yarn finger into action. The controller shown in the intermediate position in Fig. 4 is in position to thrust the fish-tailed lever forward raising active thrust bars out of action.

Method of Applying

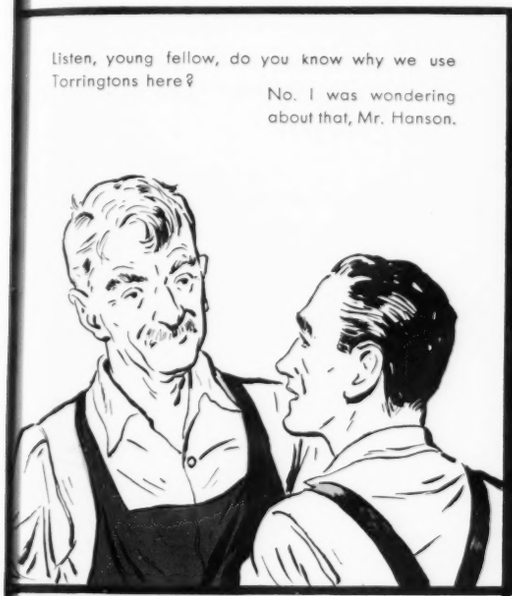
To apply the device, remove the support bracket from the machine (this is the bracket supporting the bed plate) and attach to the holes in the frame base, used for attaching the foregoing support bracket, the template (dotted) S2800 shown in Fig. 5 and drill and tap two holes No. 5/16-18 in the rear edge of the frame base. Remove the template and attach the striper control bracket 101809-AY using screws K348 in holes just made. When bracket is secured in place drill and ream ¼-inch for dowel 303086.

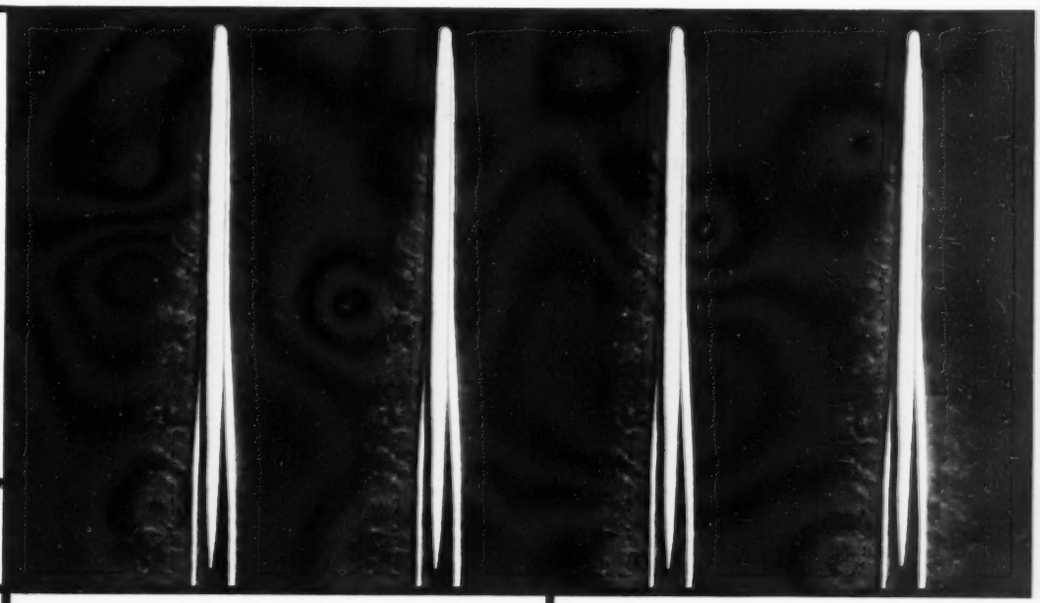
The striping bracket assembly 101818-AY is attached to the top of the machine using screw 15461 in hole now in frame. The bobbin stand rod goes

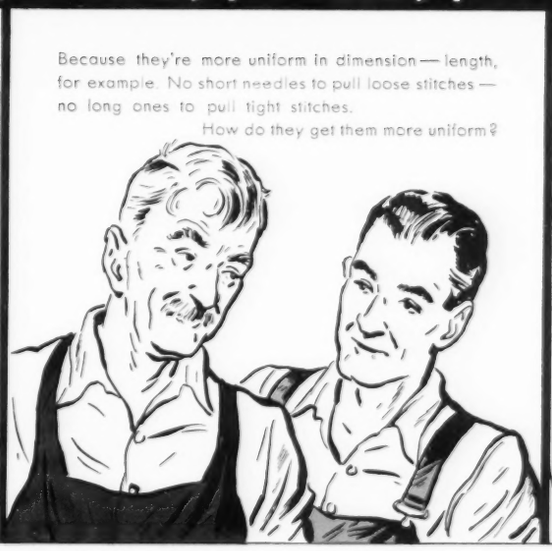
TORRINGTONS MEAN MORE EVEN STITCHES

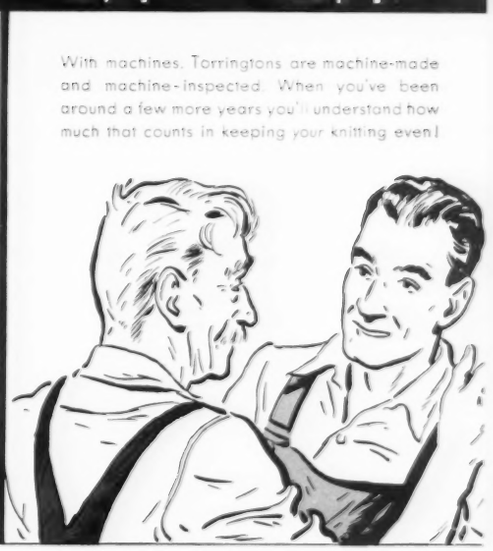
in just one dimension adds to the evenness of stitches. And remember—Torrington Sinkers, Dividers and Split Dividers are also made with the same extra machine-controlled accuracy.

● **Little things make a big difference in such a precise operation as knitting. Consider how the extra accuracy of Torrington Needles**






Because they're more uniform in dimension—length, for example. No short needles to pull loose stitches—no long ones to pull tight stitches.
How do they get them more uniform?


With machines. Torringtons are machine-made and machine-inspected. When you've been around a few more years you'll understand how much that counts in keeping your knitting even!

TORRINGTON *Needles and Sinkers*

Knitted Ski Suit Material

Progressive mills seldom hesitate to change sources of supply when "something better" appears. Considering this, it is interesting to note how many progressive mills, in this country and abroad, are now — and have been for decades — regular users of Torrington Needles. The reason for this is simple to understand. When "something better" appears in the needle line, it usually appears in the famous red and green box!

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The Torrington Company	Fairmount Avenue, Philadelphia, Pa.
The Torrington Co., Inc.	200 Fifth Avenue, New York, N. Y.
The Torrington Company	538 South Wells Street, Chicago, Ill.
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Torrington LATCH Needles

down through the ¾-inch hole in the striper bracket where it is secured with a setscrew.

To align this assembly an aligning jig is furnished. This jig is put in place connecting the sprocket shaft of the striper assembly with the main drum shaft of the machine. With assembly thus aligned tighten in place.

Put on side support bracket extension 4259 and drill and tap two holes for screws 15459. The cam 203915 which racks the striping mechanism is attached to the bevel gear as shown in Fig. 7. This cam is positioned so that when the turning crank is in a vertical position the wooden handle at the bottom of its stroke the depression in the cam will be toward the front of the machine. The face of this cam which is stamped "out" should be on the side away from the frame. Necessary adjustment is provided for this cam by the adjusting plates 9898.

The follower 101889-Y for the foregoing cam is mounted on the clutch shipper shaft as shown in Fig. 7. The racking rod 203899 is installed to connect the cam follower lever 101889-Y with the racking bracket 101805. Pivot screws are K1009.

Attach the chain reading lever bracket assembly 100786-AY to the front left hand leg of the main frame using stud 11182 in the hole made for it and screw 15278 through the upper hole in 100786 and into the 10/32-inch tapped hole now in the frame to receive it.

Put on starting rod 303024, the bent end being inserted in hole in lever 201524, which is attached to 100786 and secure with cotter 15853. The other end of the rod passes through lever 101811 on the striping bracket. Adjustment is provided at this end of rod by means of collars 6888 and 11805.

Fig. 5 shows the location of chain sprocket 101947, stud K3175 and nut C1006. The chain weight assembly is suspended in the loop of pattern chain. New thrust bars supplied replace the present bar of like shape except that they are not cut out for operating fingers.

Inasmuch as the device is new, the writer is not able to designate adjustments or to foretell what trouble will develop, or what fixing will be necessary once it is installed. A few remarks may be made concerning the various illustrations contained herewith.

Fig. 1, racking mechanism. The lower part of this sketch shows the racking cam 203915 attached to the hub of the bevel gear in the same manner as the racking cam on the present 6-track striper drum attachment. Note the racking lever is made in two parts, pivoted in the center and supplied with an adjustment screw on the bottom of one lever. This adjustment makes it possible to advance or retard the racking pawl movement. The contour of the racking cam controls the length of stroke made. The upper part of Fig. 1 shows the right and left side of the bracket and part of the selective mechanism.

Fig. 2, idling mechanism. Idling is controlled in the same manner as on other stripe attachments, namely from the leg chain on the front of the machine. Note the rod with two collars extending from the lower end of the starting lever, also the short

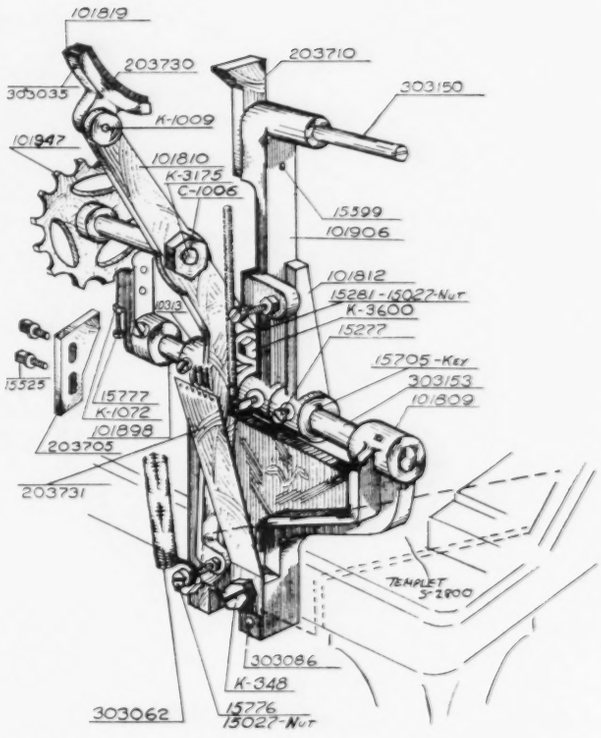

Fig. 5

shaft on the upper end of the starting lever which actuates the idling lever cam. Drum cams on the main drum take care of necessary idling in the heel and toe. The drum cam and lever resting on it actuate the racking bracket causing the pawl guard to hold the racking pawl out of action.

Fig. 3, selector mechanism. This unit shows very clearly how the selector finger is controlled by the various heights of chain link lugs. The chain link lugs raise the chain reading lever upward; the tapered cam on this lever moves the pivoted selector lever to the left; the adjusting screw on the upper end of the selector lever comes in contact with the selector block which is attached to the selector finger shaft. The height of the chain link lug determines how far the selector finger moves to the left and a spring (not shown) pulls the selector block, finger, and shaft back to neutral position when the reading lever drops off of a chain link lug. Thus, when the device is in action the selector lever rocks from right to left (note arrow) transmitting motion to the selector block and finger.

Fig. 4, thrust bar operating mechanism. Here we see how the selector finger movement controls the mechanism which actuates the thrust bars. For each thrust bar to be used there is a separate controller, raising lever, and detent lever. The selector finger stops behind a given controller, the racking lever rocks backward, the front end of the controller moves down and contacts the raising lever. The dotted lines show the movement of the detent and raising levers and the thrust bar. This particular unit may seem complicated, however, it is simple and positive in action.

Fig. 5. This shows how the lower portion of the

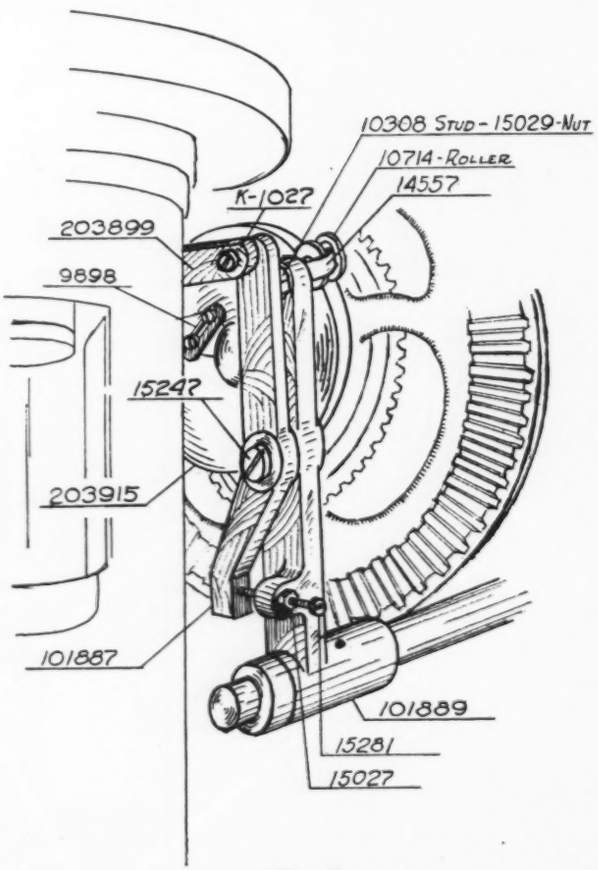

Fig. 7

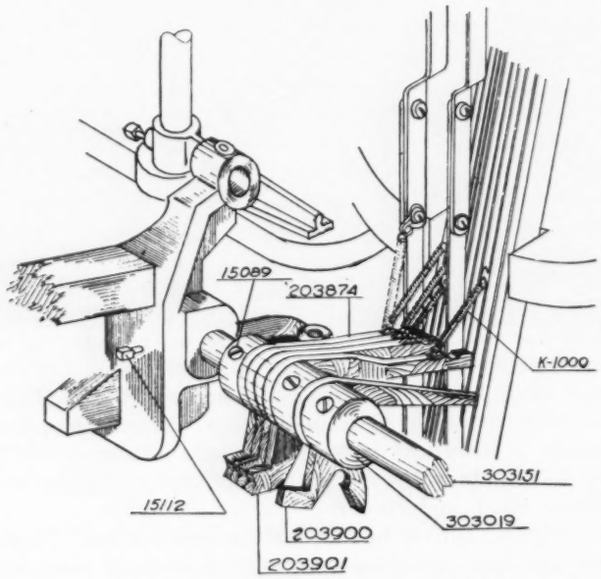

Fig. 8

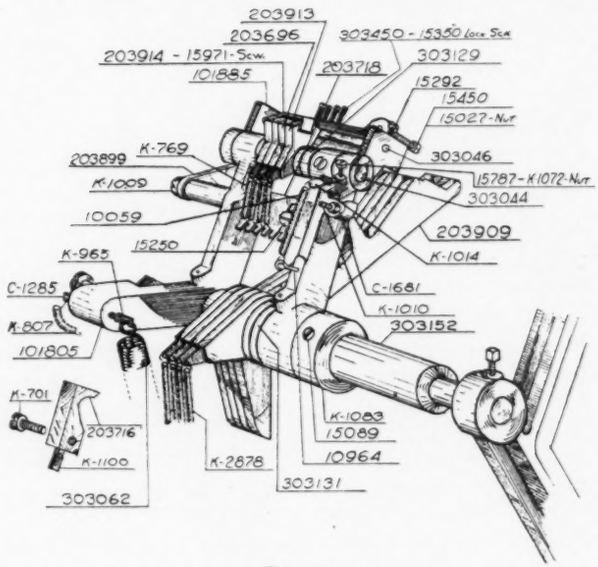

Fig. 9

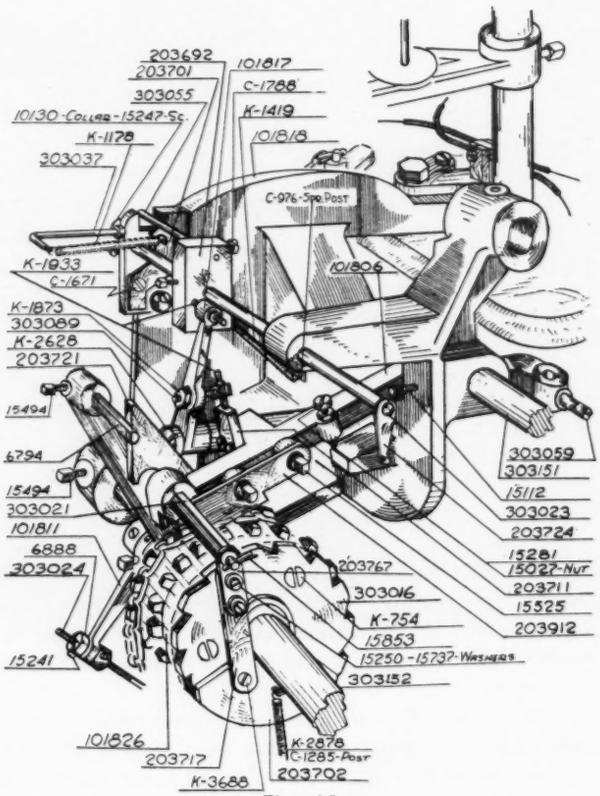

Fig. 10

striper bracket is fastened to the base of the machine frame. A templet S2800 is used to lay out holes which must be drilled and tapped. The racking bracket 101906 is shown; also, a different view is shown in Fig. 2. The friction lever assembly 101819, 203730, and 101810 keep the pattern chain sprocket and rack wheel under control while it is in operation. Cam 203705 which controls heel and toe idling is shown on the left. The springs attached to plate 203731 supply tension for the detent levers shown in Fig. 10.

Fig. 7, racking mechanism. This shows how the racking lever 101889 and other parts of this assembly appear on the machine, looking at it from the front.

Fig. 8. thrust bar operating levers. Here we see the back of the machine with part of the striper bracket and shaft 303151 on which are pivoted the thrust bar operating levers 203901. The notches in the thrust bars have been omitted. Note each thrust bar has a spring K1000 attached to it and its operat-

ing lever; this spring holds the bar on the end of the lever and prevents lost motion between them. By comparing the side view of the thrust bar operating lever shown in Fig. 4 with Fig. 8, the reader will be able to understand how these levers operate.

Fig. 9, selective mechanism assembled. This shows a fixer's eye view of the selective assembly. Note the controllers 203913, 203696, springs K769, the detent levers 203909, springs K2878, racking lever 101805, and spring 303062. A side view of this assembly is also shown in Fig. 4. One of the outstanding features of this complete attachment is the ample adjustment facilities provided for the various parts. All are easy to get at and are arranged so the fixer can readily understand what each adjustment is put there for. The various shafts which carry the moving parts are located in a similar position as those on the present 6-track striper drum attachment.

Fig. 10, striper bracket assembly. This shows the upper half of Fig. 1, all of Figs. 2 and 3. The striper chain, ratchet wheel 303016, selector lever 101817, selector block 203692, selector finger 203724, and other controlling parts are shown.

Fig. 11 shows the various kinds of chain links that do the selecting. All the mechanism shown is controlled directly by the chain links, without any fussing, cussing, and tinkering with the striper drum cams. All that is necessary is to build the striper chain and place it on the sprocket wheel—the attachment does the rest.

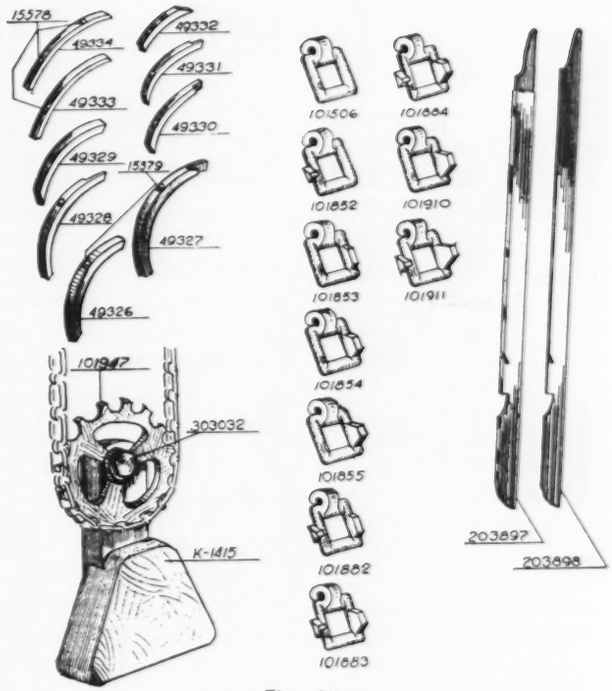

Fig. 11

BY MATTHEW K. MITCHELL

Polishing Full-Fashioned Needles and Sinkers

(Continued from page 108)

ing excessive use of the oil but because the operators themselves become careless when the machine is operating nicely. They fail to realize that they are probably piling up trouble for themselves and the fixer too, for after all, he is the one who must take the brunt of their neglectfulness. In the long run everybody benefits if the operator uses just a little more oil than necessary. When we stop to consider that with every course the machine makes the needles and sinkers come in contact with water, is it possible to use *too much* oil to counteract the effects of the water? Of course we do not mean to imply that the parts should be oiled continually but we should arrive at a satisfactory medium whereby we are fairly well assured that we will have no trouble from lack of oil.

There is a difference of opinion as to how many times a day oil should be used but we think the minimum should be morning noon and night. That is not too much and if deemed necessary oil may be used in between these hours without overdoing it. There also seems to be a disagreement as to the sort of polish that should be used. Everyone has his own brand and uses it more or less successfully but the trouble with most polish is that it not only polishes the parts but has a tendency to sharpen them to the extent that perhaps we are only exchanging a lesser for a greater evil. Ordinary metal polish will cause this condition at times even when used with the utmost caution. If polish must be used with extreme care it would seem that it is not suited for the purpose for which it is meant. We have observed the use of several different metal polishes and the particular machines on which it was used cut holes almost immediately and dozens of new sinkers and several hundred needles had to be replaced. We must not forget that we are not just polishing some knives or an ordinary piece of metal. Perhaps a certain polish may work wonders for a time but eventually it may sharpen the needles and sinkers to the point where they are no longer useful. This is not intended as a reflection on the quality or usefulness of metal polish but merely a statement that we cannot be too careful when we select a brand and decide to use it. There are several good polishing compositions on the market but the selection of any one of these must be left up to the individual.

We recommend a mixture that has been used successfully in several plants for a number of years. It is not only cheap to use but will not sharpen the needles and sinkers. It may not act as quickly as some polishes but it will not leave any ill effects. Take an ordinary cup of about a pint capacity and pour in about three tablespoons full of needle oil. Then put in two level teaspoons full of *ground* French chalk. Mix this thoroughly and then add about three tablespoons of white vaseline which any oil company can supply. Gradually mix and add needle oil until the pint cup is filled. If this solution is used two or three times a week there will be a minimum of rough needles and sinkers.

CONTRIBUTOR No. 6875

TRENDS and HIGHLIGHTS of the KNIT GOODS MARKETS

Markets Becoming Active for Fall Season. Prices Show Firmer Tone—Hardening In Rayon Lines and Firmer Tone In Worsted Outerwear. Full-Fashioned Mills Busier But Philadelphia Shops Lagging. Lightweight Underwear Finishes Strongly.

RETAIL STOCKS of hosiery have been drawn upon heavily during the last year and while no indication has come that department store and other important retailers are going to change as yet from the hand-to-mouth buying tactics, indications are that improved consumer demand will be very quickly felt by the mills this second half of the year. Small stocks also will keep mill prices firmer than they would be with large distress stocks. No lowering of knit goods prices is in sight and what few changes have been made over the last few weeks have been upward but these are not large. Full-fashioned prices unless silk goes up further are set for the balance of the year for branded although low for knitters. Underwear lightweights finished the season well and this gives a better basis for saying the fall and next spring will see the end of dullness in these mills. Prices of underwear are firmer. Higher worsted yarn rates are forcing more stability into mill prices of these lines as fall activity comes.

Full-Fashioned

Demand for full-fashioned is expanding as mills get out orders for fall. Local shops are about 10 per cent busier, according to trade estimates, or about at 60 per cent, which compares with reports from the South of full time schedules. The new labor agreement with the union has not had time probably but certainly it has had no good effects yet. Prices of full-fashioned are unchanged and steady although silk has eased from its recent peak. Mill margins are not large and buyers of hosiery expect no concessions on this score. For a 4-thread, 42-gauge ringless stocking large buyers have displayed a willingness to cover around $5.25 per dozen which is slightly higher than a month ago for immediate delivery merchandise. In view of the evident steadying of the market large buyers of hosiery such as the chains and catalog houses have been placing substantial orders running to the end of the year. There has been, of course, no change in branded prices which probably, unless silk gets out of hand, are fixed to the end of the season. Branded sales have been fair to good with heavy ordering for fall expected in September.

Demand for women's seamless has been fair to good and holding up somewhat better than the whole market, except for full-fashioned. Advances started recently by some mills are holding well, these having got under way when silk advanced. The advances in seamless vary from 5 to 7½ cents per dozen with one instance of an advance of 15 cents in 300-needle that was priced at $2.25 and now is at $2.40. In the 260-needle lines advances have been 5 cents mainly with one of 7½ cents. Seamless hosiery made from rayon has been somewhat firmer due to the latest advances of 2 to 3 cents in rayon yarns, the first advance after a number of cuts in the man-made fiber. These higher yarn rates have steadied the hosiery field somewhat but were not large enough to bring about any increase of importance in the goods prices. Low income groups are buying seamless hosiery in volume, wholesalers and retailers report.

Men's Half-Hose

Better values than in a long number of years are obtainable in men's half-hose according to buyers who say that this applies especially to such numbers as the popular Banner wraps where wholesalers find good quality in new patterns obtainable down to $1.55 per dozen. This is actually about 35 cents under the price for same at the beginning of the year. Other men's half-hose such as spirals have been affected accordingly and are being sold for prices that allow somewhat lower retail tags. In the low-end all-cotton goods such as the 176-needle where prices have been very cheap there is a disposition to mark up prices slightly but only about 2½ cents per dozen to date. But even so buyers say at the price the quality of the hose is the best they have ever seen. Some lines of half-hose brought out at $3.60 per dozen are now at $3.50 to retail at 50 cents instead of 55 cents.

Anklets

What effect the new Federal wages and hours law will have on this section of the market is creating uncertainty in prices for next spring. Many manufacturers, however, are not yet quoting prices for any delivery next year. Some manufacturers who feel they may be affected by the new law are guaranteeing prices only till January. Some mills running longer shifts say they do not yet know whether they will have to cut down to 44 or whether they will have to come down to 40 hours per week under the law now. Many mills use a new clause in contracts seeking to cover their liability under the wages legislation. Interest in novelty anklets for spring is reported good but a number of large chains have said they will not order until after Labor Day. Infants' socks and anklets and children's lines for spring are being shown with prices about the same as last year with some moderate cuts on higher-priced anklets. Practically all lines include the new wing-top construction.

Underwear

The hot weather has brought about a well-cleaned-up condition in lightweight underwear and if we have a cool, early fall the heavyweight will also get off to a good start. At any rate the industry is feeling better and business has actually been better but mills are not much busier as yet in this section. There is talk already of next spring and interest in this may develop by late September. If we have a good season in the heavy garments it is possible there may be some delays in deliveries for it is recalled that knitters have been running on very low rates for the year to date and

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stocks have been kept in hand. Mill stocks are in many cases at the low for some time past. There has been a good season in the men's briefs and these are all set for another boom season next year based on this year's experience. Wholesalers feel better now for the fall season than they have at any previous time because of their lightweight experience.

◆

Hosiery Industry Conference in New York, January 18-19

The National Association of Hosiery Manufacturers at their regular quarterly meeting in New York, July 28, made plans for the holding of a general conference of the hosiery industry in that city January 18-19. The association directors also announced that the 1939 Knitting Arts Exhibition in the Commercial Museum, Philadelphia, will be held April 17-21. The Knitting Machinery Manufacturers Association which last year proposed that the Knitting Arts Exhibition be held less frequently than every year, has agreed to exhibit at the 1939 exhibition. As a result of conferences held between representatives of the hosiery association and the machinery association in recent weeks, a committee of the hosiery association has been appointed to discuss with the machinery makers the question of frequency of the exhibition after next year. In commenting on this situation, Earl Constantine, president of the hosiery association, said:

"Since the last exhibition, those of our exhibitors who manufacture knitting machines have conferred with us with reference to their exhibiting less frequently than annually at the Knitting Arts Exhibition in view of the cost and other special problems that attach particularly to exhibits such as theirs. They have advised that they will exhibit in 1939 by understanding a committee representing our association will confer with a committee representing the knitting machine manufacturers during the coming fall, and we are sure that in the spirit which has surrounded the discussions, the matter will be worked out as regards the future, in some way mutually satisfactory to all."

◆

Handbook for Dyer

The textile research staff of E. F. Houghton & Company, 240 W. Somerset St., Philadelphia, Pa., has published an informative booklet, "Handbook for the Hosiery Dyer". It goes into a brief discussion of the fibers from which hosiery of various types is made and then explains the dyeing processes for men's hosiery, ladies' of rayon, mercerized cotton, silk, etc., and children's hosiery. Other points discussed are preparing hosiery for bleaching, degumming silk, scouring woolen hosiery, fulling hosiery, and dyeing and finishing ingrain hosiery yarn. The booklet contains a useful data section which will prove helpful to the dyer.

FORECAST

(Opinion offered by "COTTON'S" Market Correspondent)

Philadelphia, August 16, 1938

From late June to the middle of July there was strength in commodity prices. Silk hit its 1938 peak July 19 and since has eased off but has not gone back to its former lows by any means. Cotton is easy on the large government crop estimate released August 8 indicating 11,988,000 bales but wool and rayon have been firm with advances in both type yarns. This easing of some commodities in recent weeks has tempered the bullish activities of the markets this month but the large amounts of all types of yarn bought a month or more back are now going into consumption. The mills are using these purchases on actual goods orders so that the recent spurt in commodities and yarns was based upon sound premises.

This means that manufacturers did not over-buy and in many instances can buy more at the slightly lower prices now available as soon as they feel certain that the expansion in demand for their fall goods is going to keep up. Depleted inventories in wholesale and retail channels make it almost a certainty that fall coverage from textile manufacturers is going to be large but not excited. By this is meant that large retailers are going to continue buying hand-to-mouth but frequently.

This condition means that textile manufacturers and yarn producers are going to hold more firmly the second half of the year than they have for a year and this is already evident in cotton yarns where prices have been fairly firm while raw cotton was going off. In some lines such as worsted outerwear there are signs that buying has been so long delayed that a demand has been created that cannot be made up a quickly as thought. Stocks of yarns and goods in this type goods for fall are small and there is a keen demand for spot merchandise which means the hand-to-mouth buying by wholesalers was carried too far. In other words, now the buying pendulum is going to swing more in favor of the seller than during the first half of 1938.

In regard to prices. Commodities have eased recently but this is a minor reaction, except in cotton where the large supply figures. Commodities will harden again and probably go higher; yarns will go higher and prices of goods while not generally doing so yet will advance later this year. This has already taken place in worsted fabrics and in some rayon lines of knit goods. No excited price rise is in sight, but a gradual hardening as the demand end picks up to take care of what will be a fair to good fall textile season.

Most regard the temporary commodity setback with its resultant slowing up effects in buying of all kinds of textiles as a healthy development. Traders would rather see it so than to watch an excited price bubble formed that would not last. Fall improvement is starting off well with speculation at a low level and improvement based on conservative consumer demands.

◆

Hosiery Shipments Hold Above Normal

Hosiery shipments of all kinds for the month of June were 9,660,289 dozens, which was 4.3 per cent less than the 10,096,027 dozens in May, according to a report of the National Association of Hosiery Manufacturers, which states that the normal seasonal decline for this period is about 12 per cent. Compared with the same month last year, the shipments this June were only 2.8 per cent smaller. Six months' shipments this year were 60,999,009 dozens and only 6.1 per cent below last year. They were actually 9 per cent better than the same six months in 1936, and 15.3 per cent better than 1935. Women's full-fashioned hosiery, as usual, made up the largest single item this June, totalling 3,128,361 dozens, a figure that was actually 0.3 per cent higher than June of last year.

In its report, the association points out: "Large declines may normally be expected in all branches of the industry, except in ribbed and woolen goods. Contrary to this, however, substantial increases were recorded in the case of men's full-fashioned half-hose, women's cotton hosiery, children's five-eighths and seven-eighths flat and boys' golf hose. As compared with the corresponding month in 1937, June shipments in 1938 were but 2.8 per cent lower. Increases of various amounts were registered in June in women's full-fashioned hosiery, women's seamless hosiery, excluding wool, men's seamless half-hose, excluding wool and anklets. These increases, however, were offset by the drastic decline which took place in the remaining branches of the industry, which were off in degrees varying from 2.1 per cent on cotton bundle goods to 38.5 per cent in woolen goods. These figures would indicate that there is a good

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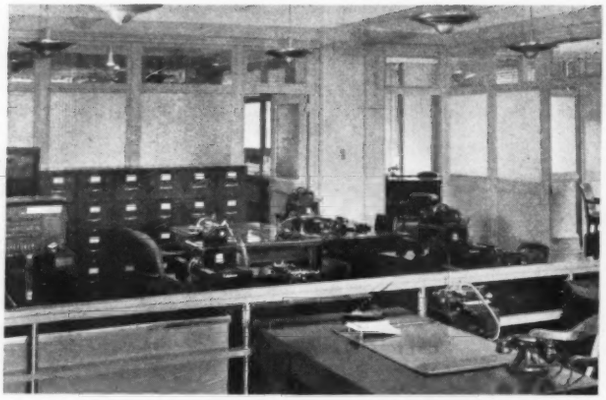
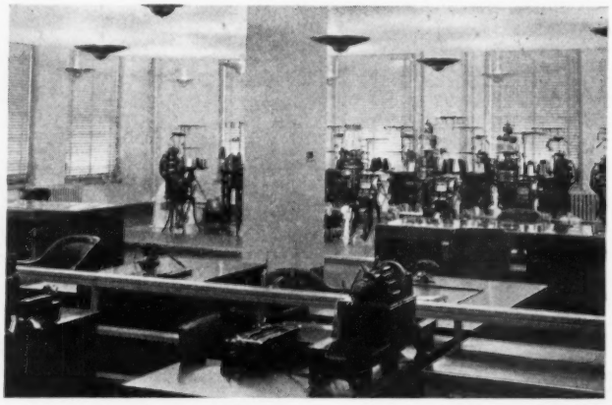


Sales and executive offices of the company's modern home at 40 Worth Street . . . . . .



Sales demonstration room at the New York office. The machines are made at Laconia, N. H. . . . . .

Scott & Williams, Inc., pioneer American knitting machine manufacturers, have moved their executive and sales offices to 40 Worth Street, New York City. The new quarters, located in the heart of New York's textile center, are in the modern up-to-date building on the corner of Worth and Church Streets. Here the company has opened attractive display rooms with special facilities for the demonstration of the latest improvements and innovations in knitting machinery.

A complete line of machines and all modern attachments is set up, ready to run. Large space is devoted to the smart display of a complete line of plain and fancy hosiery, knitted underwear garments and fabrics produced on Scott & Williams machines. Also included are additional facilities for service and consultation with customers in handling and demonstrating technical machine problems. The company extends a cordial invitation to its many friends to visit the new offices and see them at first hand. The company was established in 1865. Its manufacturing facilitie are still centered at Laconia, N. H., and the New York office of the firm had been located at the 366 Broadway address for the past 24 years.

◆◆◆

chance for shipments in 1938 to excel those of 1936, which the industry looks upon as a good measuring stick for gauging its business. The large movement of hosiery of all kinds has unquestionably been supported by low and attractive prices within the purchasing power of the masses. However, the effect of these low prices has been plainly evident in reports of lower earnings by hosiery mills covering the first half of the year. The industry takes pride in the popularity of its product and has steadily been giving more value for less money. There would be more satisfaction were it possible for manufacturers to get more return on their investment and effort.

◆

Full-Fashioned Machine Census Shows Further Southern Gains

A recent census of full-fashioned machines in the United States places the total at 15,751 with 400 of these estimated to be idle awaiting disposition by sale or removal or stored in warehouses. These totals are as of March, 1938, according to the Statistical Department of the Textile Machine Works. Their census for January, 1937, indicated 15,830 machines but this figure was considered somewhat high by the research department of the American Federation of Hosiery Workers. The present alignment of machinery credits the various producing areas with the following totals: Philadelphia, 18 per cent; other Pennsylvania, 32 per cent; West, 13.5 per cent; New England, New Jersey, New York and Delaware, 11.5 per cent; North Carolina, 13 per cent and other South, 12 per cent.

These figures show that Philadelphia decreased in importance 3 per cent from January, 1937, to January, 1938; the West decreased by 1¾ per cent, New England, New Jersey, New York and Delaware by less than 1 per cent, while North Carolina rose 4 per cent and the rest of the South, 1 per cent. The Textile Machine Works bulletin estimates that 280 machines moved into the South during 1937. It also lists 373 full-fashioned hosiery mills in the United States as of March, 1938. The number of wage earners in the hosiery industry for all types of goods has risen sharply since 1923, with most of this rise occurring in the full-fashioned branch of the industry. In 1937 it lists wage earners as 145,200, which compares with 96,300 in 1923.

◆

Old Hosiery Firm Discontinues Business

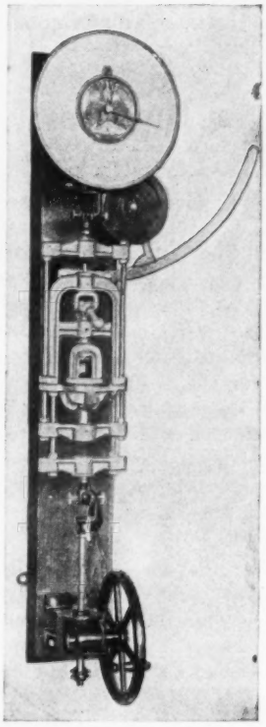
John Blood & Co., Inc., an old-established full-fashioned hosiery manufacturer, with knitting mill at Boyertown, Pa., and a finishing plant in Philadelphia, has disposed of all of its equipment and withdrawn from the business. Ernest Blood, president of the company, which was incorporated in 1916, has retired from the hosiery field. He has been treasurer of the National Association of Hosiery Manufacturers for over ten years. The company's thirty-odd knitting machines have been sold and will be moved to another location, according to a trade report. The building occupied by its Philadelphia dyeing and finishing plant was sold several months ago.

◆

Wages and Hours Law Causes Uncertainty in Anklet Prices

Uncertainty as to the effects of the Wages and Hours Act on several manufacturers of anklets has created a moderate amount of uncertainty as to the prices of these mills on goods for next spring delivery. Those manufacturers generally operating 40-hour shifts within wages at or above the minimum of 25 cents an hour set in the new Act effective late in October are quoting spring anklets freely for any delivery next year. Certain other manufacturers have estimated their increased cost under the new measure are doing the same thing. Others, however, are guaranteeing prices now being quoted only to a certain date and still others claim it is practically impossible for them at this time to figure how much they will have to charge for anklets made after the new legislation is effective.

SCOTT TESTERS



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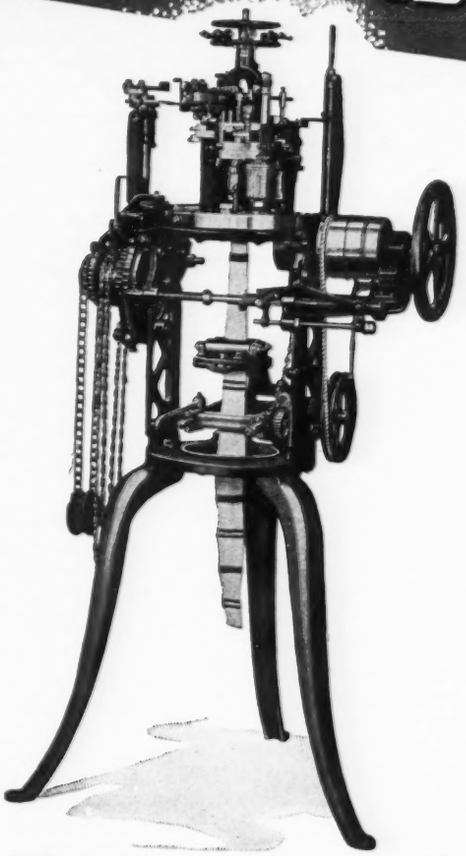

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Mills which are running shifts considerably in excess of 40 hours per week say it is difficult for them to estimate their new cost until they know whether they can run 44-hour shifts or will have to go down to 40. Many mills are using stamps on their order forms, seeking to protect themselves against increased costs as a result of new legislation. The new Wages and Hours Law has created uncertainty also regarding deliveries in other branches of the industry, it being apparent, for example, that many carded yarn producers do not know how much it will effect them and many of these firms now insert a similar protective clause in contract for yarns, calling for shipments after the probable effective date of this important legislation.

◆

Imports of Hosiery Slump Drastically

Imports of hosiery into the United States for the first half of this year slumped to 27 per cent of the total imported in the first half of 1937, a compilation by the National Association of Hosiery Manufacturers indicated. Japan, whose threat to flood this country with cheap cotton numbers was met two years ago by the association with an agreement restricting such imports for three years was chiefly responsible for the decline. From Japan there came 241,025 dozen pairs in the first half of this year, compared with 908,502 dozen pairs in the same period in 1937. While the boycott agitation of recent months has disappeared for the most part, hosiery wholesalers and retailers are still averse to handling merchandise from Japan and, anyway, find that values in domestic-made hosiery have been improving all the time. Importers of Japanese hosiery have been gradually liquidating their stocks and the withdrawals of late of hosiery placed earlier in government warehouses has been especially heavy. For the last four months, warehouse stocks of these goods have gone down to the extent of 143,000 dozens in excess of entries.

◆

Knitting Company Cleared by Court of Labor Charges

The United States Circuit Court of Appeals, New York, early in August, handed down an opinion holding that the National Labor Relations Board in an order issued April 7, 1938, urged in finding that the Ballston-Stillwater Knitting Co., Inc., manufacturers of hosiery and sweaters, employing 900 workers at Ballston Spa and Stillwater, N. Y., had indulged in unfair labor practices. The Appeals Court held that a union limited to employees of a single employer is as legal as any other and nullified the previously noted cease and desist order against the company.

The concluding paragraph of the opinion handed down August 1 reads in part: "The board's findings as to unfair labor practices by the petitioner are not supported by substantial evidence." In the spring of 1937, the Textile Workers Organizing Committee began operations in the plants of the company. Later, the Employees Welfare & Protective Association was formed. Out of the struggle for control between these two groups, the present action began. The court found there had been no direct attempt by designated representatives of the TWOC union to negotiate, that the association is not a company union in the sense of being dominated by company officers or financed by company funds, that the testimony of evidence does not indicate that oppression was used to deter employees from joining the TWOC and that there was no discrimination in layoffs that occurred following the formation of the association.

◆

Experiments in New Type Hosiery Yarn Interesting

A new type of synthetic yarn with sharply increased elasticity and strength said to be over rayon yarns now available make it especially adaptable for use by full-fashioned hosiery manufacturers. Such a yarn is in experimental production by E. I. du Pont de Nemours & Co. It is stated, however, on good authority that the yarn, a product of several years' research, probably will not be in commercial production for at least two years. The new yarn known as "No. 66 Fiber" is not made of cellulose and in that sense is not a rayon but is declared to be made of a complicated combination of chemicals, and to be spun by being drawn instead of being forced through a spinnerette.

The yarn has been run experimentally in a few full-fashioned hosiery mills and those who have seen samples have said it has more elasticity than silk and others, that it had even greater strength than silk. Some who have seen the sample stockings are enthusiastic about what they term the remarkable improvement shown by these samples over the ordinary rayon stocking and its tendency to bag, which has been the principal reason why the use of synthetic yarns by the full-fashioned hosiery industry has been confined to relatively small amounts. It is reported that the initial price will be about the same as for silk according to present indications.

◆

Interwoven Invokes Penn. Fair Trade Act

The Interwoven Stocking Co. of New Brunswick, N. J., on August 3, filed an application in the Court of Common Pleas in Philadelphia for an injunction against the Globe Men's Shop, also of Philadelphia, to restrain the defendant from selling the plaintiff's products at less than the resale price, stipulated in its fair trade agreements now or hereafter in effect with its retailers. The plaintiff also seeks to recover damages for such loss or injury as it has sustained by the alleged act of the defendant.

It is set forth that on June 5, 1935, a Pennsylvania law was enacted known as the "Fair Trade Act" and under its provisions, the plaintiff entered into agreements with some of its dealers and retailers in Pennsylvania and notified all retailers. It is alleged that the defendant has failed to abide by the terms of these agreements and on the contrary has sold the plaintiff's products at less than the price stipulated in Fair Trade Agreement, causing unfair competition under this and under the Miller-Tydings Act of Congress. It is alleged that the defendant advertised in its store window "Interwoven 35-cent socks at 30 cents or three pairs for 85 cents" and "Interwoven 55-cent socks for 44 cents."

◆

June Underwear Statistics Encouraging

Government data for the underwear industry for June show that the large stocks which burdened many manufacturers over the last year are being liquidated, being 13 per cent smaller the end of this June than a year previous. New orders with the mills were on the other hand 16 per cent higher than a year ago. Production for the month of June was 9 per cent above normal in the underwear industry as a whole, reflecting the late buying for the fall season and also the late summer business that is still being done at retail. In the knit short trunks, shipments this June amounted to 176,000 dozens compared with 145,000 dozens a year ago.

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TRENDS—THE YARN MARKETS

Spurt In Yarn Coverage Last Month Subsides—Prices of Cotton and Silk Decline But Rayon and Worsted Yarns Advance. Sharp Gain In Rayon and Cotton Yarn Shipments

Philadelphia, August 16, 1938

COMMODITIES GENERALLY have been easy over the last month and this has made for less active buying of most types of yarns but there have been exceptions to the rule. Cotton and silk have declined and yarn coverage in each has been far smaller than during the preceding month but this is due to the fact speculation in yarns by textile manufacturers is being kept down and orders are largely for goods in hand. Cotton yarns and silk have declined in price but not drastically. On the other hand, worsted and rayon yarns have advanced with the best activity of the year in both. Manufacturers are covering for fall needs with indications the season will be a fair to good one with most, but hardly likely to offset losses of the first six months. Cotton yarn shipments have held up remarkably well even though new business has declined; silk mill activity, especially hosiery mill rates, are expanding; worsted knitters are busy now for fall and makers of rayon goods are taking in more rayon than for many months.

Cotton Yarns

Although raw cotton has dropped almost ½ cent over the last four weeks to a level where government loans again become profitable for growers there has been no general cut in cotton yarns. They are softer but excepting some combed yarn cuts, the average spinner is not quoting lower. This is significant because it indicates a change in the market, swinging away from being so much a buyers' market and becoming more two-sided with indications this trend will become more marked during the rest of the year. In fact, spinners could have booked much more business over the last two months but they refused it, declaring that they will be able to get better prices and have wider margins later on in the year. Buyers have been amazed at this new attitude.

New business has been much smaller during the last month than during the previous four-week period but to make up for part of this spinners are receiving the best and largest shipping instructions on their old contracts of the present year. July shipments were the largest of any month to date but sellers report that shipments this month so far are running somewhat ahead even of those of July. This means that the bulk of the yarn recently purchased is going into actual consumption and also that there was comparatively little speculative buying in yarns as is frequently true after a long period of inactivity and when market sentiment changes so suddenly as it did in the latter part of June. With spinners having now about six weeks' business in hand and with shipments being made at a good rate, there is very little inclination for sellers to shade prices even though raw cotton has been particularly weak, dropping about a half a cent, whereas yarns have declined less than this.

Mercerized yarns have acted in line with combed and carded in that new business has declined materially this month, but as an offsetting factor, shipments on old contracts are being made at a good rate and mercerizers are running around 75 per cent of full time, or at the best rate of the year. Prices are unchanged with the better yarn being quoted on the basis of 63 cents for 60s two-ply ungassed.

Silk

After reaching a peak for the present year July 19 raw silk has declined about 10 cents but it remains approximately 30 cents above its low point of this year which was struck around June 3. As the price of silk along with other commodities has displayed weakness over this period, buying interest has subsided even though hosiery manufacturers are operating more machines as they are busier on fall goods orders. Notwithstanding the reaction in silk in recent weeks, the trade feels that this setback is only temporary and that a firm market will shortly develop. During the upturn some of the larger hosiery manufacturers covered their raw silk needs for the balance of this year but a fair number of firms held off, feeling that they had lost their position in the market and that they would await a temporary recession, such as we are now experiencing to permit them to purchase more advantageously.

There are also a fair number of hosiery manufacturers that have continued to follow a hand-to-mouth buying policy, covering only immediate requirements by placing ten, five and even two-bale orders with silk dealers. This means that considerable silk will be bought as hosiery manufacturers book their fall business, which is expected to be good, in view of the way retail hosiery sales have been holding up. Silk consumption for July was under trade predictions, with mill takings of 32,593 bales, which was 1,000 bales larger than in June. This figure compares with 31,399 bales consumed in July, 1937, or with 31,492 bales in June of this year. Stocks in this country at the end of July totaled 42,305 bales, which was less, however, than the 44,457 bales in stock at the end of June and 41,494 in stock at the July, 1937.

Rayon Yarns

The most important development in this market over the month was the 2 to 3-cent advance made in quotations July 29, by the American Viscose Corp., which was followed by similar advances shortly thereafter by other producers of viscose type yarns, with the Dupont Company naming a new list early in August but also effective as of July 29. At the same time, most producers, including the American Viscose Corp., announced that the time they would open their books for October delivery orders at these new prices, which restored the booking period for yarn to the 90-day basis which was in force until last spring's price reductions, when producers adopted a 60-day booking period. The new price list lists 150 denier, 24 filament at 51 cents compared with 49 cents in the former price list dated May 23. Oiled cones were two cents per pound less, so they are priced now at 49 cents for this size compared with 47 cents formerly.

Worsted Yarns

Worsted yarns have made outstanding gains this month both in respect to volume and prices. Volume has been the best this year over the last four weeks and knitting yarn spinners in this district are operating from 65 to 75 per cent which is a distinct gain when it is recalled the same firms got down to about 30 per cent early this year. Another factor of importance is that all this yarn is going into consumption being used in goods in which in many cases there is an actual shortage. Prices of knitting yarns have advanced 5 cents per pound in most instances with 2-20s, 50s quoted a month back at 95 cents recently firm at $1.00 with other counts up on a proportionate basis. Outerwear manufacturers have become busy on fall sweaters and there are also indications that the early fall will find bathing suit manufacturers in the market in view of the fact that knitted 1938 swim suits were very well cleaned up. Manufacturers reported, in fact, they could have sold more of these garments if they could have made prompt deliveries.

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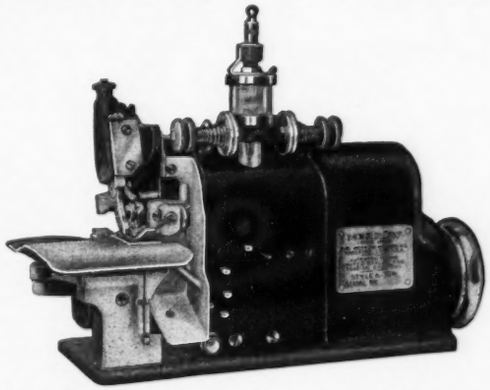

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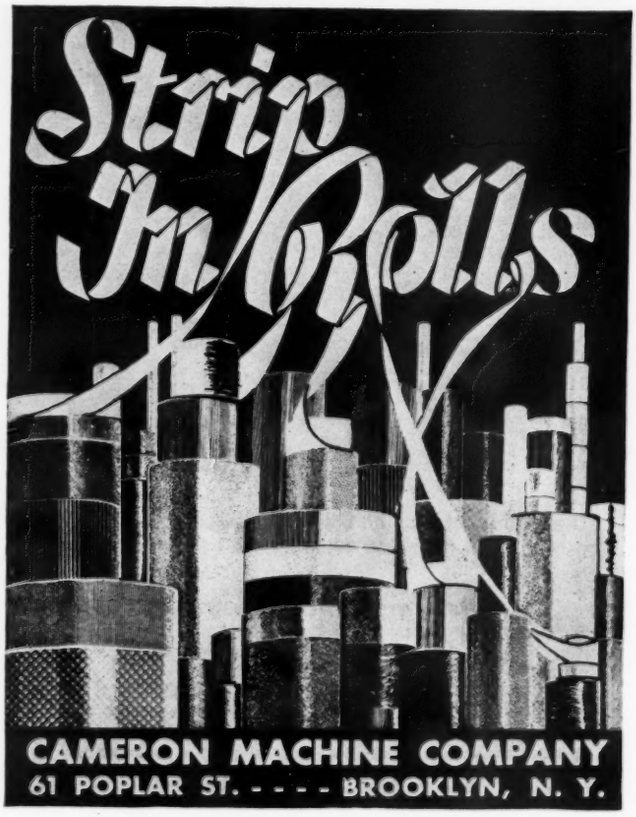

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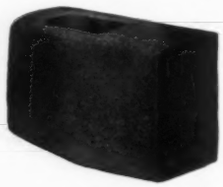

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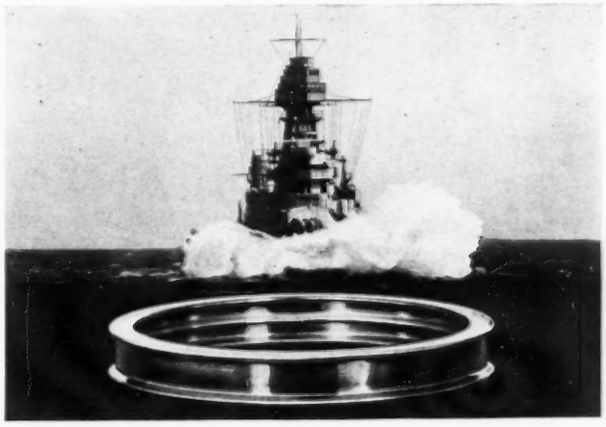

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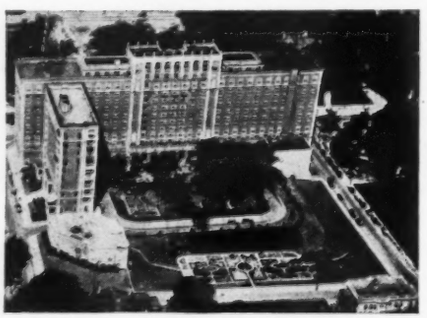

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**Air conditioned bed rooms!*

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THEY last longer because they are reinforced at the places where ordinary parts break.

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HAMPTON. GEORGIA

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PQ

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Imparts a most desirable softness, without grease, oil or odor.

●

SAPAMINE FL

Added to the dyebath, gives similar results in one operation.

●

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●

MIGASOL PJ

A simple padding and drying gives a fine water-repellence.

●

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Vat dyes of
THE DOW CHEMICAL COMPANY

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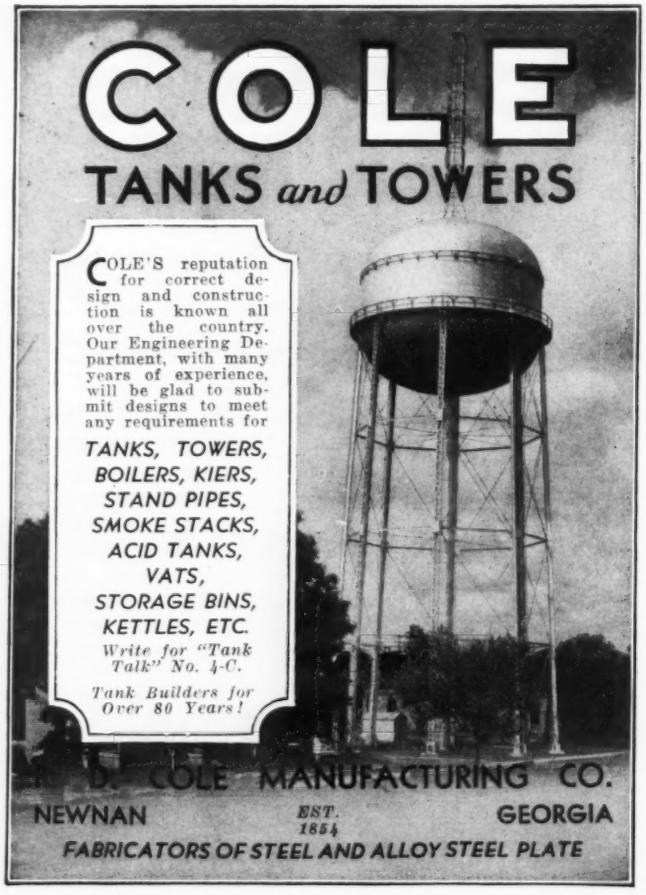
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Tank Builders for Over 80 Years!
D. COLE MANUFACTURING CO.
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FABRICATORS OF STEEL AND ALLOY STEEL PLATE

AN UP-TO-DATE PRINTING PLANT

equipped with modern machinery and a staff of competent workmen, solicits, thru this publication, a trial order on your printing needs.

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DALTON GEORGIA

CLASSIFIED ADS

BUSINESS—EMPLOYMENT—EQUIPMENT—PROFESSIONAL CARDS—OPPORTUNITIES

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Rates are net, payable in advance each month. No commission or discounts. Page is 3 columns, 10 inches deep—30 inches to page. Space measured by even inch vertically by 1, 2 or 3 columns in width. Column width 2¼ inches. Rates based on the total space used in one year.

	Per Inch		Per Inch
1 inch	$5.00	13 inches	$4.20
3 inches	4.80	20 inches	4.00
6 inches	4.60	50 inches	3.80
10 inches	4.40	100 inches	3.00

UNDISPLAYED

Advertisements set "want ad style." Positions wanted .05 word per insertion. Minimum charge $1.00 per insertion. Cash with order. All other classifications .10 word per insertion. Minimum charge $2.00 per insertion. Advertisements of equipment, for sale, for rent or wanted and professional cards are accepted at display rate only.

Box number address care of COTTON, Grant Bldg., Atlanta, Ga., count as eight words.

WANTED
Overseer of Weaving

We want a high-class overseer of weaving for mill with 60-inch Draper looms with C. & K. dobbies, and some C. & K. box looms with dobbies, on diversified products. Send applications with full details of experience to Box 453, care COTTON, Grant Bldg., Atlanta, Ga.

POSITION WANTED

Would like to contact cotton mill wanting man for general office work. Can handle any clerical job. Understand all operations in buying cotton. Some experience classing. Have handled market positions and bought cotton for large cotton firm. Employed at present, but would like to get back in textiles and cotton. Age 35, married; can furnish references. Write to box No. 445, care COTTON, Grant Building, Atlanta, Ga.

Paul B. Eaton
PATENT ATTORNEY
1408 Johnston Bldg., Charlotte, N. C.
514 Munsey Bldg., Washington, D. C.
Cormer Member Examining Corps
U. S. Patent Office

POSITION WANTED

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"CIRCULAR KNITTING PRACTICES" is a new book telling how others meet many seamless problems.

This book is one of the most inclusive that has been written for the circular knitting trade. It has over 200 pages of practical interest to managers, superintendents, foremen, knitters, dyers, boarders and learners.

You can get this fine book—attractively bound in a heavy cover—and a three-year subscription to COTTON, 36 issues in all, for only $2.50. If you are already a subscriber, expiration date of your subscription will be advanced three years. Send in your subscription today or write for further information.

COTTON, Grant Bldg., ATLANTA, GA.

Eliminate Foaming at Slasher

with

TALGUM PG

STODGHILL and COMPANY

ATLANTA GEORGIA

safe WITH STEWART

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Before buying, investigate Stewart Fence. Send for catalog giving complete details. Sales and Erection Service in all principal cities.

"World's Greatest Fence Builders Since 1886"

Stewart IRON and WIRE FENCES

The STEWART IRON WORKS CO., Inc.
594 Stewart Block
Cincinnati . . . Ohio

This Unusual RIDGID Alloy Tool-Steel Wheel-Blade Gives You

- Faster
- Lower Cost
- Pipe Cutting

Your skill at mechanics makes it easy for you to see why this RIDGID Cutter with its new style wheel-blade can cut pipe more quickly and cleanly and last far longer, giving you extra economy.

For the RIDGID knife-like blade is coined out of fine tool steel, hammered, heat-treated and then assembled in the hub. That's what gives it the unusual stamina for hundreds of extra cuts, reducing cutter wheel expense, as thousands of users know.

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For time and expense saving and a tool you get a "kick" out of owning and using, buy the RIDGID Cutter — at your Supply House.

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RIDGID PIPE TOOLS

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New Duplex Twister Travelers — C. E. F. Twister Travelers

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Southern Office: — 131 West First St., — Charlotte, N. C. — C. D. Taylor, Southern Agent

Southern Representatives L. Everett Taylor, H. B. Askew, P. O. Box 272, Atlanta, Ga.—Otto V. Pratt, Union Mills, N. C.

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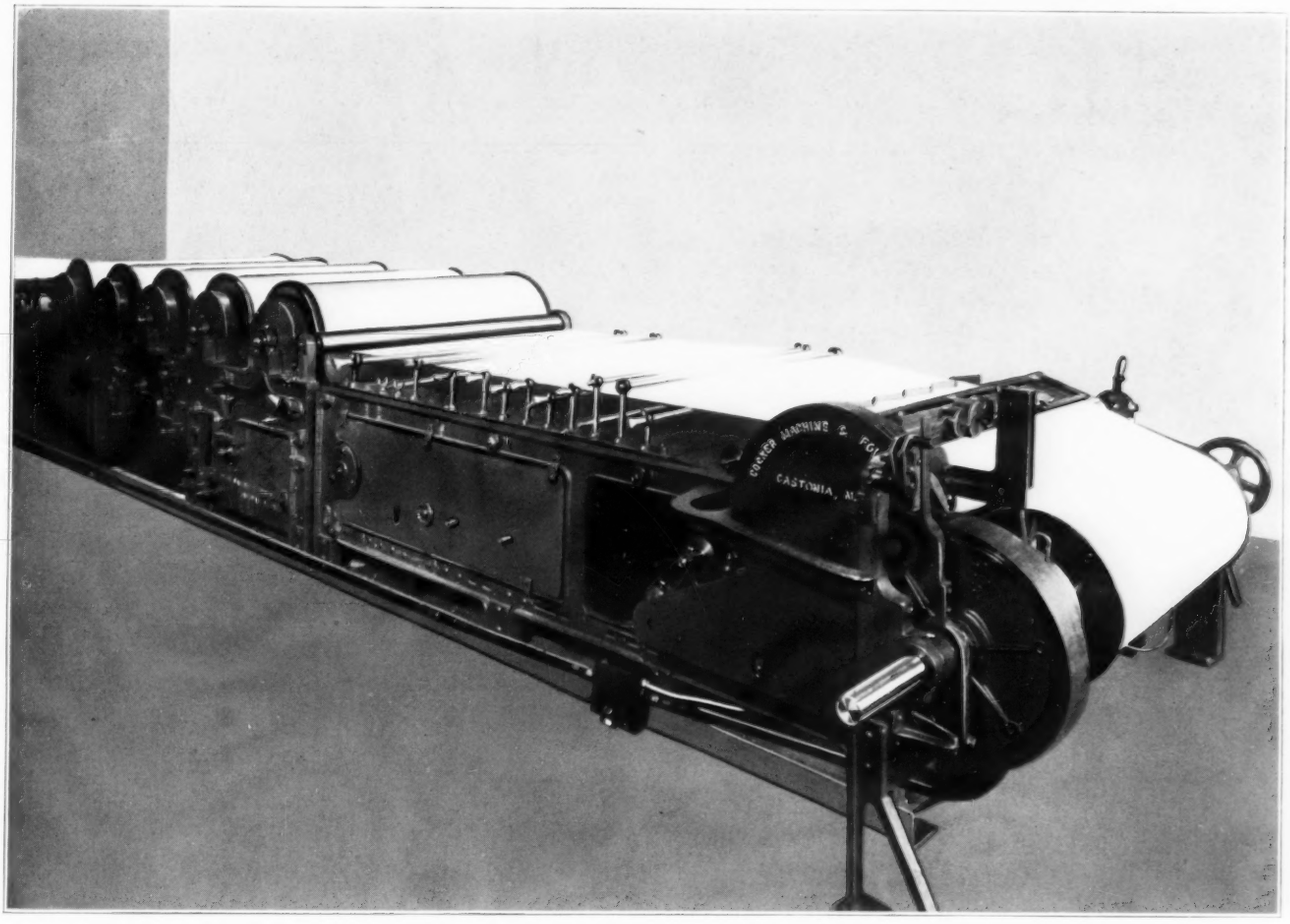

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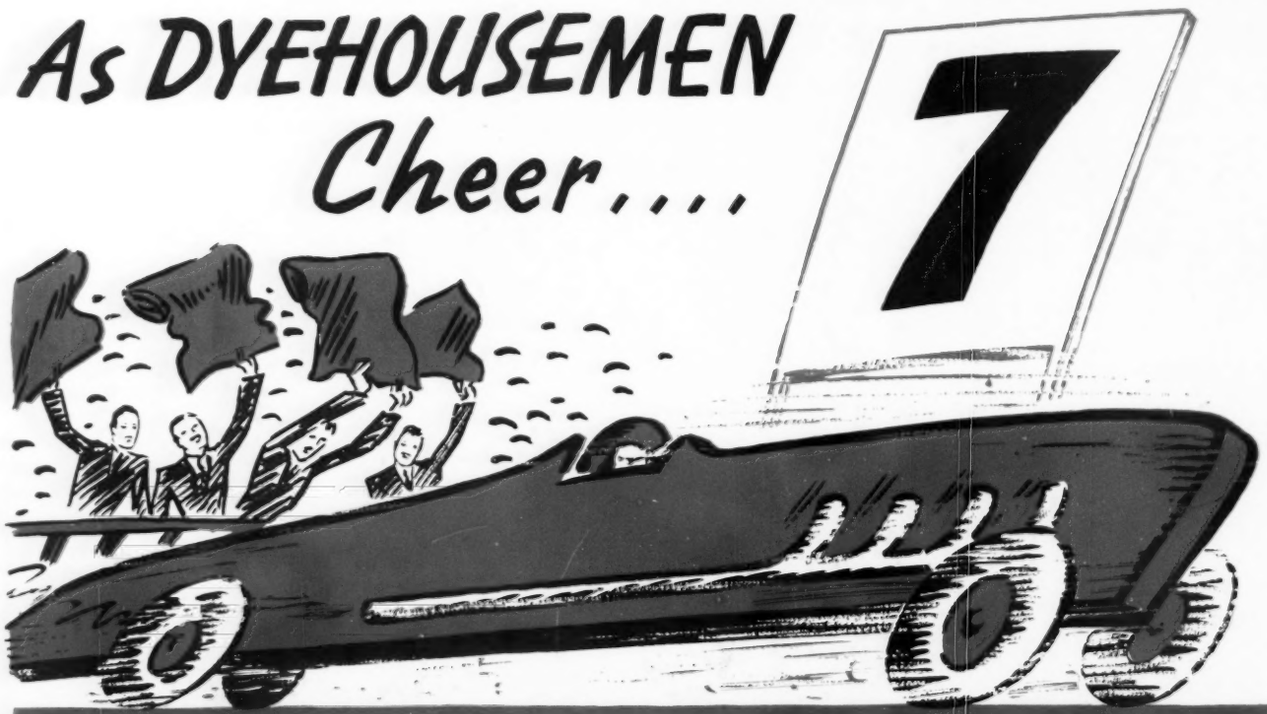

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